OCTOBER
1955

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Extended Lazy H Antenna — Band Spreading And All That!

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3500 Kc.	7005 Kc.	7042.65 Kc.	7126 Kc.	8183.5 Kc.
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Vol. 23 No. 10

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WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI: Sundays, 1100 hours EST, 7146 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI. Intrastate working frequency, 7125 Kc.

VK3WI: Sundays, 1130 hours EST, simultaneously on 3573 and 7146 Kc., 51.016 and 146.25 Mc. Intrastate working frequency 7135 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI: Sundays, 0900 hours EST, simultaneously on 3560 and 14342 Kc. 3560 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the W.I.A. Country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5MD and VK5WI by arrangements on all bands to 50 Mc.

VK6WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

VK7WI: Sundays, at 1000 hours EST, on 7146 Kc and 146.5 Mc. No frequency checks are available.

VK9WI: Sundays, 1000 hours EST, simultaneously on 3.5, 7, 14 and 144 Mc. Individual frequency checks of Amateur Stations given when VK9WI is on the air.

AMATEUR RADIO

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

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Melbourne, C.1.

EDITORIAL

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HORIZONS AHEAD

The Amateur is Progressive. Into these few words from the Amateur's Code is crowded most of the great history of the Amateur. From the days of Marconi and his fellow collaborators of that era, the Amateur has carried on the good work of research and experimentation and has in so doing built up a reputation of industry and resourcefulness in the art of electronics. The advent of the last war, and latterly the poor ionospheric conditions produced by the sunspot cycle, brought about a limitation of normal Amateur activities. These events, together with the official change of title from experimenter to Amateur operator, have no doubt conveyed the impression that the Amateur is no longer interested in experimental work.

What is the future of the Amateur? It is becoming increasingly apparent that the hordes of Broadcast and Commercial carnivores are gradually ingesting our precious frequencies, compressing us into smaller and yet smaller channels. The Amateur will bitterly oppose and resent this unfair intrusion into his hard won and well merited territory; he will nevertheless continue to blaze new trails and open up new pastures in the v.h.f. and s.h.f. spectrums—a field in which the "limited" licensee will revel.

Recent announcements in the Press regarding the proposed launching of satellite space stations has perhaps been viewed by the average layman as Jules-Vernish rubbish. Such, however, should not be the attitude of the progressive Amateur, for like the scientists, he may well see his future among the stars. In this direction, lie several interesting avenues for the Amateur. One of these may be long distance communication, as already some partially successful experiments have been carried out in "bouncing" radio signals off the moon. Why not use our natural satellite as a new heaviside layer for reflecting our signals back to earth at a distance? Dr. Wernher von Braun, the famous German engineer and astrophysicist, has postulated that radio signals in the 140 Mc. region show every indication of being ideal for bridging space. Here, then, in an Amateur frequency channel, is an immediate means of testing a new technique.

This method of long distance communication, however, will pose many new problems for the Amateur. He will not only need to be an electronician, but would need a working knowledge of astronomy and celestial surveying. He would also need to be a reasonable mathematician as well as a good tinsmith or plumber. These trades he would need for calculating distances and angles and making his high frequency apparatus. Antennae would need to be accurately tiltable as well as correctly aligned in azimuth. The Nautrical Almanac would be as commonplace on the operating desk as the log book. Pulse modulation techniques would need to be used in order to obtain sufficient power for transmissions. These and other techniques new to the Amateur would all play a part in once again achieving DX contacts.

This is but one method the Amateur may employ to preserve his reputation as the pioneer of radio techniques. If this Editorial has turned your thoughts in new directions, it has achieved its object; but the final answer lies with you, the Amateur.

FEDERAL EXECUTIVE.

THE CONTENTS

A Transmitter With Low Harmonic Output

PART ONE

BY HANS RUCKERT,* VK2AOU

THE requirement of low harmonic radiation by Amateur transmitters is actually not new, but this construction point was usually more or less neglected by us. Some operators may have received notice from the P.M.G. Department about their radiation of harmonics outside the 7 Mc. band from their 3.575 to 3.8 Mc. transmission. Others had trouble with b.c.i., because the harmonics of their transmitter were beating with harmonics of the local oscillator of their neighbour's b.c. receiver, forming i.f. or r.f. signals the b.c. receiver was tuned to. The v.h.f. Amateur usually builds "band" receivers so he does not listen to harmonics his fellow Amateurs are putting out. Other v.h.f. services are very often not close enough to Amateur stations to have a great deal of trouble from harmonics.

All this will be different when our neighbours erect their t.v. beams only a few yards away from our Amateur station aerials and their t.v. reception channels will fall just outside of Amateur bands where our harmonics have been tolerated so far. We will soon have no alternative but to close down our station or to build our transmitter up to modern standards to suit the t.v.-t.v.i. conditions.

When the Government decided to introduce t.v. in the capital cities of VK2 and VK3, the DX conditions were again at the very bottom, due to lowest sun activity of the present cycle. So the author thought that this would be the best time to go off the air, re-build the transmitter, make tests with low-pass and mains-line filters to be ready for the next good DX season, and also to reduce the chance of being driven off the air by angry neighbours, who wished to view t.v.

We will now discuss the transmitter only, filters and their calculation, alignment and construction will be described in a later article.

An important measure to reduce harmonic output is to avoid generating high power harmonics which are difficult to confine to certain transmitter stages and within their shieldings. A further method of suppressing harmonics is to use inductive coupling with shielded link lines which prefer the fundamental and by-pass any higher frequency harmonics which may still try to get through.

These methods alone with filters can bring a ratio of fundamental to harmonic output of 100 db. (100,000 : 1) or S9 plus 40 db. to S1.

● By now, our readers have had an opportunity to study last month's article, "Who Will Be On The Air When TV and TVI is On?"

No doubt many resolutions to "re-build" have been made. Mr. Ruckert has sent us manuscripts and circuit diagrams of his completely t.v.i. proofed transmitter, which we are most happy to publish. In view of the great amount of detail he has provided, we are presenting the complete article in instalments over the next few months. Part One, presented this month, covers the v.f.o., frequency multipliers and driver stages.

Next month the final stage, antenna coupler and modulation checker will be described. From there on, we will cover the speech amplifier and power supplies. The low pass filter in use will also be described.

To all who wish to live happily with their t.v. viewing neighbours, Mr. Ruckert's article is highly recommended.

*25 Berrille Road, Beverly Hills, N.S.W.

V.F.O.-DOUBLER STAGES

Figure 1: A v.f.o. is a must these days for flexible operating when DX hunting and to reduce QRM. With the different ceramic capacitors, in a full range of

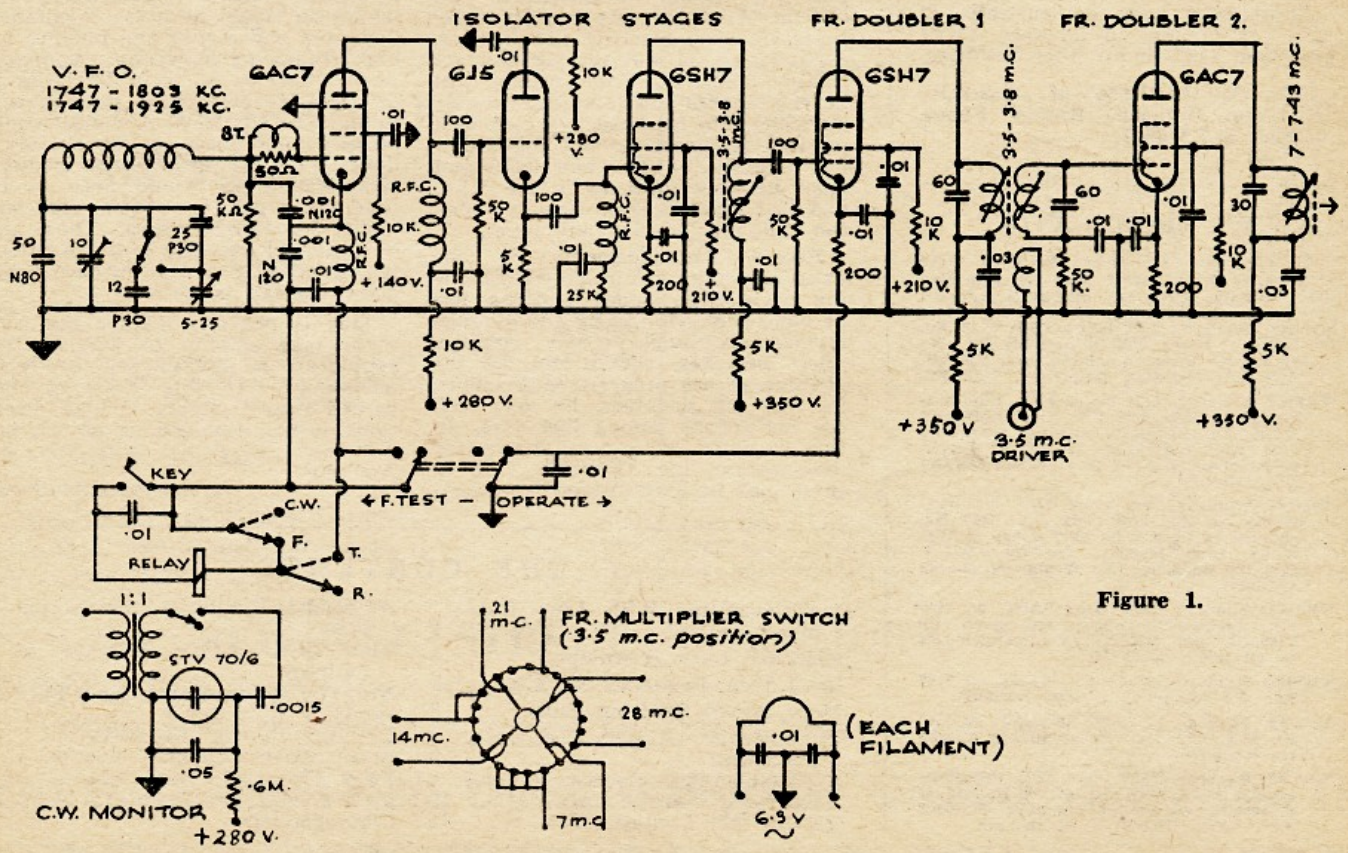

Figure 1.

temperature coefficient values available, it is no longer difficult to achieve the highest degree of stability. For the same reason, the Clapp oscillator circuit was used because the oscillator valve is coupled very loosely to the tuned circuit at low impedance points.

The v.f.o. works at 1.75 Mc. because larger L-C components are easier to get stable. Two ranges are used to get band spread for the 7, 14, 21 and 28.0 to 28.5 Mc. band, whilst the 3.5 and the whole 28 to 30 Mc. band can be covered with the other range.

For c.w. work the oscillator cathode is keyed. A switch closes the oscillator cathode and opens the cathode of the first doubler valve so that the oscillator frequency can be tuned to a received channel without exciting the final and aerial (F-test or operate).

Certain switches like "c.w. or phone" and "T or R" (transmitting or receiving) will be found on different drawings of the circuit and they control, with relays in some cases, the necessary operations on different transmitter chassis by throwing one switch only.

The 50 ohm resistor and the eight-turn coil at the grid of the oscillator are necessary to prevent the generation of audio frequencies here.

The filament current of the first two valves is regulated and the plate and screen voltage is regulated in all those cases where 140v., 210v. or 280v. is indicated.

The two further v.f.o. valves act as isolator stages to prevent load variations from effecting the operating conditions of the oscillator. The slug core of the choke in the plate circuit of the 6SH7 v.f.o. valve is tuned in such a way that the v.f.o. delivers a constant output over the tuning range.

No strong v.f.o. valves are required to drive the low power frequency doublers. It was very important to use only two or three watts input at the frequency multiplier stages to keep the harmonic power level as low as possible. With modern pentodes, which need only 1 to 1.5 watts driving power for 100 watts input, a low power driver can easily give all the output needed when used with these very low power frequency multipliers. The first two frequency doublers operate with valves like 6SH7 and 6AC7.

DOUBLER AND TRIPLER STAGES

Figure 2: There is a string of five frequency multiplier stages of identical design on a sub-chassis. Two of these doublers are shown in Fig. 1, whilst two other doublers and one tripler can be seen in Fig. 2.

Each multiplier stage should only deliver the harmonic its plate circuit is tuned to. In contrast to the usual design with only one tuned circuit between the stages, we find here band-filters with three tuned circuits. In this way a uniform gain over the entire Amateur bands was achieved without having to tune any multiplier when changing frequency. The resulting good skirt selectivity of each filter pass-band helps to suppress unwanted harmonics any frequency multiplier may generate.

The band-filters of each multiplier stage are inductively coupled with a link line using co-ax cable to the third tuned circuit of the set-up, which forms the grid circuit of the driver stage. The last doubler valve, EF14, is similar to the 6AC7, but this Telefunken steel valve can handle 5 watts plate dissipation (if required). The driver valve could have been a 6V6, but the 807 was selected because the plate and grid connections had to be far apart to get better shielding.

This 807 valve is not a frequency multiplier, thus helping to filter undesired harmonics before they reach the final, where they could be amplified to such a degree that a low-pass filter would have difficulty keeping them inside the rig.

A variable screen grid resistor allows adjustment of the drive at any frequency to the required 8 Ma. grid current of the final for 100 watts input. Only 350 volts at the plate and 50 to 100 volts at the screen grid are necessary and usually only 20 to 30 Ma. plate current is measured.

A single switch selects the desired grid circuit and so the correct frequency multiplier when changing bands.

To be able to use good shielding of the transmitter, all stages had to be designed for band switching from the front panel.

— • • • —

HAVE YOU MODIFIED AN AT5?

The Magazine Committee has been asked by a New Zealand Amateur for conversion details for an AT5 transmitter to enable him to operate on 80, 40, 20, 15 and 10 metres. If anybody has made such a conversion, we would very much appreciate the details. Can you help?

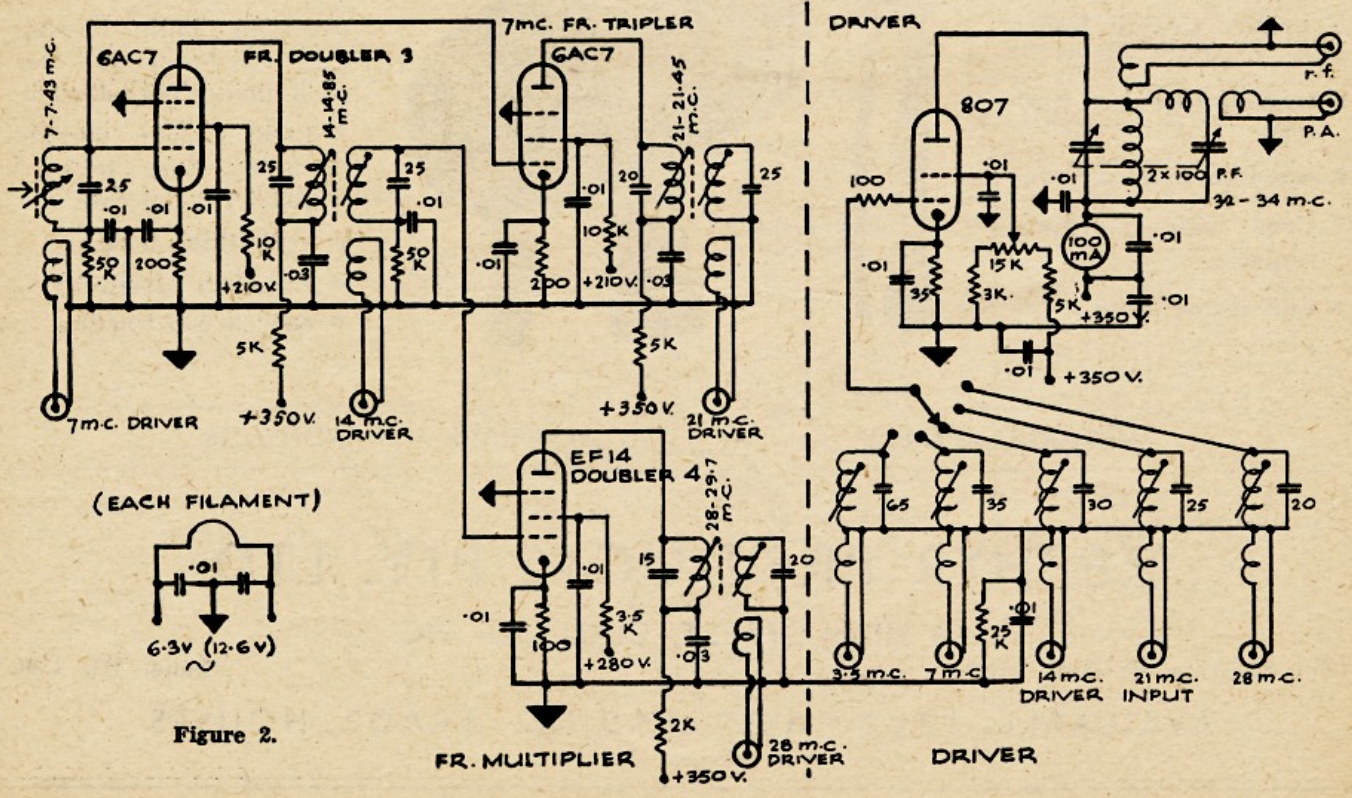

Figure 2.

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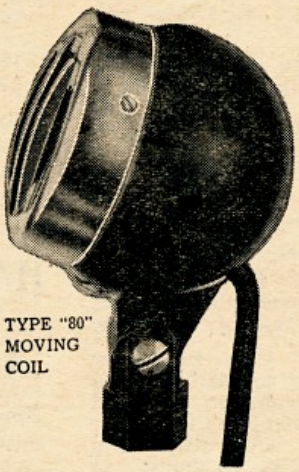

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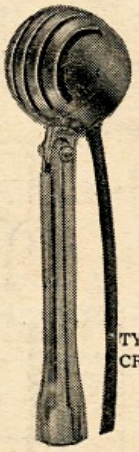

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Modification of the Extended Double Zepp Antenna to the . . .

Extended Lazy H Antenna

BY WAL. E. SALMON,* VK2SA

One of the most controversial subjects in Amateur Radio is the means by which a desired degree of antenna efficiency is obtained. In the early days of experimentation rotary beams were unknown and most Amateurs contented themselves with horizontal or vertical wires and after much patient work achieved varying degrees of efficiency.

With the development of the Yagi antenna the two, three or four element rotary beam for Amateur frequencies became commonplace and it would appear that the trend in this direction is gaining in popularity particularly with Amateurs residing in thickly populated areas where land space is limited.

For purpose of discussion in this article, the writer has purposely refrained from introducing any comment on vee beams or rhombics as the article is purposely written for the Amateur who is interested in operating on several bands and who is not prepared to erect a costly mast structure to support several beams and who by virtue of restricted space must necessarily design an antenna to conform with the area available.

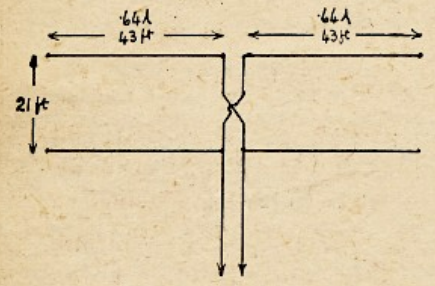

Fig. 1.—Modified Extended Double Zepp.

The antenna to be described is completely original and to the writer's knowledge has not been described or published in any local or overseas journal. We have "ZL Specials" and "G8PO" antennae and for want for a name the antenna might be called "The Extended Lazy H."

Several years ago the conventional Lazy H antenna was cut and erected for 14 Mc. The aerial consisted of two horizontal colinear elements stacked two above the other and separated by a half wavelength in the vertical plane. The array was erected on two 41 foot masts, the lower two elements being only nine feet above ground. The effective height of this type of antenna is measured from the centre between the top and bottom elements to ground and in this case the effective height was approximately 24 feet. Needless to say the observed efficiency was only about equal to a full wave zepp 41 feet high on the same frequency.

* 106 Flora Street, Sutherland, N.S.W.

Attention was then directed to the possibilities of the Extended Double Zepp, reference "QST," June, 1938. The height of one mast was increased to 45 feet to compensate for ground slope and the antenna cut for 14 Mc. and erected for north-east south-west directivity. Improved efficiency over the full wave antenna was apparent on W contacts on 14 Mc. and in addition some excellent phone contacts were made with W stations on 7 Mc. Results on 21 Mc. indicated a number of major lobes giving good DX contacts. From the results it would appear that this type of antenna possesses the desirable feature of good efficiency on all Amateur frequencies, the gain over a dipole on 14 Mc. being 3 db.

The theoretical gain of the previously mentioned conventional Lazy H antenna of 5 to 6 db. was considered attainable only if the lower two elements could be elevated to a height approaching one half wavelength from ground. This was impossible to achieve with the existing masts. Consideration was then given to the possibility of adding two additional extended half wave lower elements to the Extended Double Zepp and an examination of the nodal points on the Double Zepp antenna indicates that the correct point for connecting two lower elements would be approximately 21 feet from the flat top, according to frequency of operation in the 14 Mc. band. Connection at this point is essential in order that the antenna current in the four elements is equal in value.

The calculation subsequently proved not at all critical as the completed antenna operates with equal efficiency in any part of the 14 Mc. band. The feed line between the top and bottom elements is transposed and element lengths are referred to in Fig. 1. Current flow in the antenna is illustrated in Fig. 2.

The writer considers the Extended Lazy H is more efficient than the accepted version of the Lazy H for a given height for the following reasons:

(1) The close proximity of the four half waves in the Lazy H antenna causes an undesirable degree of mutual coupling between them with a consequent reduction in gain. This defect in design is considerably reduced in the extended antenna described.

(2) The effective height of the antenna for a given height in masts in the writer's case when compared with the conventional Lazy H was increased from 24 feet to 31 feet, the lower elements being approximately 20 feet from ground.

The adaptability of the modified antenna to operate on 21 and 7 Mc. is worth serious consideration and excellent DX contacts have been effected on both bands. The directional characteristics on 21 Mc. are not yet known, but signal reports indicate the presence of major lobes giving good general coverage. On all bands a series parallel antenna tuner is used and a four inch spaced open wire feed line couples the tuner to the antenna.

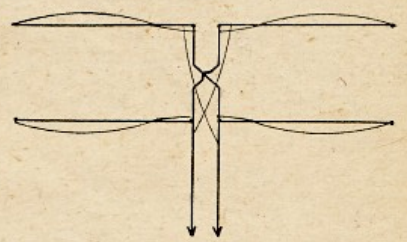

Fig. 2.—Current flow of Extended Lazy H.

The reader may now be interested in results achieved and the writer would like to add that for results on 14 Mc. the antenna has outperformed all previous wire antennae tried out for W contacts on both long and short paths. The lower two elements were added to the extended zepp on 19th December, 1954, and numerous W phone contacts have been made since that date. The majority of the signal reports being S8 and S9 and nothing below S6 and S8 from East Africa. The power input is approximately 75 watts for all contacts.

An analysis of all signal reports indicate equal if not better performance to stations using rotary beams in the desired direction and it would appear that the accepted gain of 5 db. of the conventional Lazy H is exceeded. Comparison reports have also been made by the simple expedient of removing the two lower elements, the antenna then becoming the Double Extended Zepp and the signal was reported to drop two S points and in some contacts a drop of three S points was reported.

PHOTOS OF VK3WI EXHIBITS

Three photographs were taken of the W.I.A. Victorian Division's stand at the All Models Exhibition. One is viewed from the left, another from the centre, and the other from the right hand side, the latter is shown on page 14.

Any member desirous of obtaining a copy of these large photographs is requested to communicate with Max Hull, VK3ZS.

Band Spreading And All That!

BY V. J. McMILLAN,* VK2AWN

It is not my intention to enter into arguments as to the relative merits of the various types of valves, what constitutes the "best" intermediate frequency, whether or not a crystal filter or QX'er is desirable, the desirability of a separate oscillator valve as against the normal "mixer-oscillator" valve, or the dozens of other points which have been contentious points between Amateurs for years.

No! I simply propose to give one method of band spreading which, to the best of my knowledge, has never been fully explained, other than by a brief, airy statement that it works, and dark hints that the calculations are too complicated to worry about!

Fig. 1 shows the scheme in essence. F.C. is the band setting condenser, V.C. is the tuning condenser, and the inductance consists of a single coil of T1 + T2 turns. The capacity of the combination of F.C. + V.C. is given by the formula:

Capacity =

$$\text{F.C.} + \text{V.C.} \left(\frac{T1}{T1 + T2}\right)^2 \quad \ldots \quad (1)$$

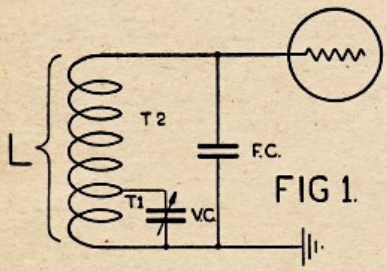

FIG 1.

It will be noted that the effective capacity of the variable condenser V.C. varies as the square of the proportion of T1 to T1 + T2. To put this a little more simply, if we centre tap the inductance (i.e., T1 = T2) then the apparent capacity of V.C. is only one-quarter of its real capacity since

$$\left(\frac{1}{1 + 1}\right)^2 = (\tfrac{1}{2})^2 = \tfrac{1}{4}.$$

This fact immediately suggests that we can use practically any capacity of two or three gang broadcast band condenser and still obtain a relatively small effective value.

The band setting condenser F.C. consists of a number of separate capacitances which, in the main, are:—

(a) The actual band setting condenser itself.
(b) The inter-electrode capacity of the valve.
(c) The capacity between turns of the inductance.
(d) The stray capacity of the inductance to earth.
(e) The stray capacity of the wiring between the inductance, its value and condenser to earth.

This seems a formidable list, but, generally speaking, we can make an assumption for items (b) to (e) which only leaves (a) to worry about.

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● Those of us who build their own Amateur receivers—either by choice or necessity—have been somewhat neglected in the popular Technical Press in certain fundamentals of theory and practise. In the following article the Author has endeavoured to set out in logical sequence, a beginner's approach to band spreading a receiver.

Let me digress here for a moment to explain that I am assuming you will be making a receiver having plug-in coils for each band, since, in my opinion, this is the only effective method of obtaining high gain coupled with good selectivity, using a minimum of stages. It is, of course, possible to make a band-switched arrangement to cover more than one band, but this usually leads to considerable trouble and certainly does not make for short, well shielded leads.

To get down to something concrete, let us assume that we wish to make a set of coils to cover the 21 megacycle band with some overlap. Let us also assume that we have a broadcast condenser of 400 pF. and some 807 valve bases which we want to use.

The first step is to make an assumption for the stray capacity of the circuit, and bearing in mind that we will have short leads, we can assume a figure of 30 pF. This minimum value of capacity determines the highest value of inductance (L) that we can use to obtain a given circuit resonance frequency.

It is not my intention to declare that the best L/C ratio is a certain value, but it is necessary to bear in mind that, in general, high values of L will usually give high values of Q, better stage gain and selectivity. On the other hand, a lower value of L (and therefore higher C) will usually give better mechanical and electrical stability, which makes for more constant calibration in terms of frequency and dial position. For my own part, I prefer to have a high value of L even though this does mean short time frequency drift due to r.f. heating, mainly around the oscillator section. You must make up your own mind on this score and if you are really keen, it is surprising what you can do with negative temperature co-efficient condensers, or, easier still, a small variable trimmer condenser across the oscillator section of the main tuning gang. (A value of about 10% of the main condenser will do nicely.)

In addition to our previously estimated figure of 30 pF. we can add a further 10 pF. to be in the form of a variable tubular type condenser. This gives a value of F.C. in formula (1) of 40 pF. when the gang condenser plates are fully out of mesh.

Fig. 2 shows portion of a chart† which correlates inductance, capacity and frequency.

From the 40 pF. mark on this chart we draw a line through the 22 Mc. frequency and obtain an inductance value of 1.32 microhenry. Working backwards from this 1.32 microhenry point through the 20.5 Mc. point we find that the required capacity is about 46.5 pF. That is to say, we require to increase the apparent value of V.C. by an amount of 6.5 pF. Incidentally, if your L/C/F chart does not extend far enough in the L values, just extend the L scale line in pencil; mark off the intersecting point from the other values of F and C and scale off from the last marked division. Since the scale is logarithmic, it extends indefinitely, but the decimal point alters and so the actual physical distance on the scale is the same as the marked scale above it, but changes its decimal point.

We have now established the required values of L and C (total).

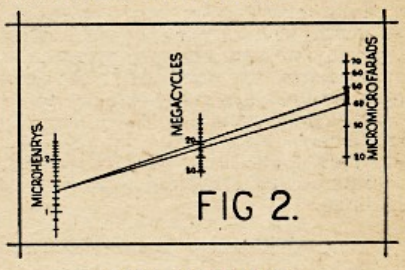


FIG 2.

COIL WINDING

At this stage we must consider the practical aspects of winding an inductance using an 807 valve base as its mounting and connecting device, and also as a supporting device for the band setting condenser F.C.

If you are fortunate enough to be able to screwcut a thread in the base, I suggest that you cut a thread of 16 turns per inch. For the winding itself, I would suggest bare copper wire of about 20 s.w.g.

Fig. 3 shows a suitable arrangement of base connections to the main coil and also its coupling coil to the previous stage. From this figure it will be noted that the main coil L will be an odd half turn arrangement in order to retain straight leads through to the pins, and to leave the interior of the base relatively open, so making the mounting of the band setting condenser F.C. inside the valve base a simple job.

CALCULATION OF INDUCTANCE

We are now in a position to calculate the required number of turns for L, having a value of 1.32 microhenry.

There are quite a number of methods for doing this, and most of the Handbooks cover the subject fairly well. The formula I use is the well known "Wheeler's Formula" which gives the value directly in microhenries.

† Wireless World Radio Data Charts; R.S.G.B. Handbook; Radio Handbook; A.R.R.L. Handbook.

Wheeler's Formula:

$$L = \frac{a \times a \times T \times T}{9a + 10l} \quad .. .. \quad (2)$$

where a = Mean turn radius in inches.
T = Turns.
l = Length in inches.
L = Microhenries.

Using our known facts of former size, wire size and threads per inch, we find that 5½ turns will give us the closest approximation to 1.32 microhenry, viz.:

$$L = \frac{0.688 \times 0.688 \times 5.5 \times 5.5}{9(0.688) + 10(0.344)}$$

$$= 14.32 \div 9.63 = 1.49 \text{ microhenry.}$$

Using this value of L, we now check back on the required value of F.C. + C which we find to range from 41 pF. to 35.5 pF., that is, C requires to be 5.5 pF. for a band of 20.5-22 Mc.

From formula (1) we can deduce the following fact:

$$\left(\frac{T1}{T1 + T2}\right)^2 \times V.C. = C \quad .. .. \quad (3)$$

where T1 = Tapped portion of L.
T2 = Remaining portion of L.
V.C. = Capacity of gang condens.
C = Apparent capacity of gang condenser in the L/C combination.

Since we only require to know the tapping point (that is, the value of T1), we can substitute in formula (3) and obtain:

$$T1 = (T1 + T2) \times \sqrt[2]{C \div V.C.} \quad .. .. \quad (4)$$

Our known facts are:
(a) T1 + T2 = 5.5 turns.
(b) C = 5.5 pF.
(c) V.C. = 400 pF.

It is purely coincidental that the figures in (a) and (b) are the same.

Inserting these values in formula (4) we obtain:

$$T1 = 5.5 \times \sqrt[2]{5.5 \div 400}$$

$$T1 = 5.5 \times \sqrt[2]{0.01375}$$

$$T1 = 5.5 \times 0.1172$$

$$T1 = 0.645 \text{ of a turn.}$$

If you have forgotten how to extract the square root of a fractional number, the following ratios of V.C. ÷ C may help you (note the ratio is not C ÷ V.C.)

V.C. ÷ C	$\sqrt[2]{C \div V.C.}$
100	0.1
90	0.105
80	0.112
70	0.120
60	0.129
50	0.141
40	0.158
30	0.182
20	0.224
10	0.316
5	0.447

From this table you will be able to establish to an approximate degree, the tapping point on the winding, bearing in mind that the final tapping position will be subject to a certain amount of trial and error.

For the actual winding on the valve base, it will be necessary to drill some 1/16" diameter holes at all points where the coil leads pass through the side of the valve base as determined by the number of turns on the coil, and also for the tapping point. As I stated previously, if you can screw-cut the valve base, it makes the job so much easier, but if you cannot, then you will have to space wind the turns, preferably using a slightly bigger wire for the spacing wire. Wind both wires on together and when the proper winding is firmly anchored, just unwind the spacing wire. For the tapping lead it is better to use a much smaller wire (about 26 s.w.g.) which is easier to handle and bring "through" two adjacent turns and yet not cause a short circuit between them. The soldering on of the tapping lead is quite tricky but, believe me, when you have done half a dozen, you are quite an expert!

The next thing we have to consider is how many turns to put on the next stage coupling coil. The actual turns are not particularly critical and I usually make them about one-third of the main coil (subject to consideration of the spacing of the valve base pins). In our present case we have 5½ turns and ⅓ of 5½ is 1.83. It so happens that we can obtain very close to this number if we connect the coils to the valve pins as I have shown in Fig. 3. The spacing between coils should be about ⅛".

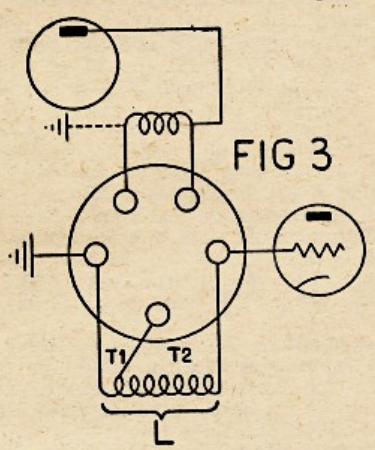


FIG 3

After mounting and connecting the band setting condenser inside the valve base, we are in a position to test the coil to see whether it gives us the band spread that we want. This brings us to the use of the grid dip oscillator, together with the hetrodyne frequency meter (which you must have as part of your station equipment).

GRID DIP OSCILLATOR

Fig. 4 shows a simple form of grid dip oscillator circuit which is the well known Hartley oscillator with a resonance indicator in the form of a milliameter in the grid circuit. Practically any triode valve is suitable, but the circuit values of resistance and coupling condensers will vary, depending on the valve type. The variable tuning condenser should be about 150 pF. which will give a band coverage of about two to one in frequency. That is to say, one coil should cover both the 40 and 20 metre bands. There is nothing to prevent you using 807 valve bases as plug-in coil mounts to cover practically any band up to about 56 Mc.

It is not necessary to use batteries or even a high tension d.c. supply for your g.d.o. I would suggest that you purchase a cheap bell ringing transformer of the type that has the primary and secondary windings alongside each other. Dismantle the transformer and strip off the existing secondary winding, counting the turns as you do so. Re-wind the secondary to give a suitable voltage for the filament of the valve you intend to use. Over this winding and connected to it, wind a suitable number of turns of fine gauge wire to provide a voltage of anything from 50-100 volts. The free end of this winding becomes the high tension plate supply for the g.d.o. and the valve itself becomes its own rectifier.

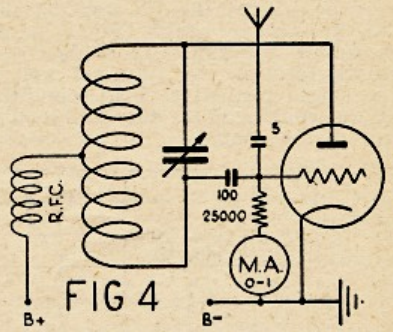


FIG 4

This arrangement has the obvious advantage of cheapness and is always available for use, whereas batteries have a habit of being dead just when you want them. In addition, this arrangement has another very important advantage, and that is the very distinctive hetrodyne note which is not a whistle, but rather sounds like a telephone B-rrrr!

Using the g.d.o. and checking against the hetrodyne frequency meter, you should have no difficulty in picking out the first, second, third and other sub-harmonics of the g.d.o. frequency. For instance, when you measure your 21 Mc. coil, you should be able to check the g.d.o. frequency on 7 or 3.5 Mc. with your hetrodyne frequency meter. The relative strength of the signal gives a guide as to which sub-harmonic you are listening to.

If you have never used a g.d.o. before the "modus operandi" is to loosely couple the g.d.o. coil to the coil under test and vary the g.d.o. tuning until a pronounced dip is noticed in grid current. The minimum grid current point is the resonant frequency point.

Re-Winding Transformer

It occurs to me that some additional information on re-winding the bell transformer to suit the particular purpose we have in mind would not go amiss.

Fig. 5 shows a typical voltage regulation curve in terms of output voltage measured across the 8 volt winding of a small bell-ringing transformer. These transformers are usually rated at 200-250 volts 40-100 cycles and have secondary output voltage alleged to be 3, 5 and 8 volts at 1 amp. From Fig. 5 it will be noted that with 240 volts applied to the primary, the no-load secondary volt-

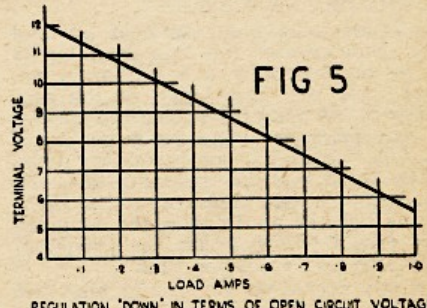
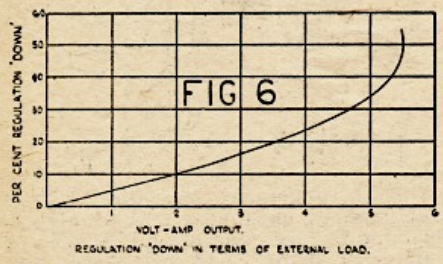


FIG 5
REGULATION 'DOWN' IN TERMS OF OPEN CIRCUIT VOLTAGE.

tage measured on the 8 volt winding was 12 volts which drops in a straight line to 5.5 volts with a 1 amp. load.

From this graph we can draw another graph (shown in Fig. 6) which shows the regulation "down" or voltage drop expressed as a percentage in terms of output volt-amps. This graph will not be a straight line as was the first graph. The second graph (Fig. 6) is the most useful one since it enables us to correctly forecast the terminal voltage under any particular load condition when re-wound, up to the full load as shown in the graph.



To take a practical case, let us assume that we want to supply the filament of our g.d.o. at 6.3 volts and 0.3 amps. and we also want a plate voltage of about 80 volts and 3 milliamps. (0.003 amps.). The total load is thus:

$$6.3 \times 0.3 = 1.89$$
$$80 \times 0.003 = 0.24$$
$$2.13 \text{ volt-amps.}$$

Referring to Fig. 6 we see that with an external load of 2.13 volt-amps., the voltage regulation "down" will be about 11%. We therefore have to re-wind the secondary to give a "no load" filament voltage of:

$$\frac{6.3}{100\% - 11\%} \text{ or } \frac{6.3}{(1.0 - 0.11)}$$
$$= 6.3 \div 0.89 = 7.09 \text{ volts}$$

and the plate supply voltage will be:

$$\frac{80}{(1.0 - 0.11)} = 90 \text{ volts at no load.}$$

This is not strictly correct, since the calculation of voltage regulation of a three-winding transformer is rather more involved than this simple method.

All we have to do now is to measure the open circuit voltage and loaded circuit voltage of our transformer, draw the two graphs shown (the harmonic's science exercise book is a great help here!), determine what voltage and current we want, and see from the graph whether it is within the transformer rating. The graph will also show what regulation to expect on the completed re-wind as before explained.

The next step is to dismantle the windings from the transformer, unwind the secondary coil and, at the same time, carefully count the turns.

From our measured value of no load volts (incidentally the "no load" volts can be measured by a 1 milliamp. a.c. meter) and our knowledge of the secondary turns (since we counted them), we can determine the volts per turn. (That is, we divide the secondary volts by the turns.) From the value of volts per turn, we can determine the turns for any voltage by dividing the required volts **plus** the regulation (as predetermined) by the volts per turn.

Strictly speaking, we should alter the cross sectional area of the secondary wire inversely proportional to the alteration of no load voltage, but it will probably be "near enough" to use the same wire and add a couple of per cent. to the turns for luck. For the plate supply voltage we will have to use a much finer gauge of wire to get the turns in the space available.

To give an example, if the transformer has the characteristics as shown in Fig. 5 and has 370 turns on the secondary, then the volts per turn will be (at no load) $12.0 \div 370 = 0.0324$. Since we have predetermined that we require 7.09 volts at no load, then we require $7.09 \div 0.0324 = 219$ turns on the secondary for the filament winding, and $90 \div 0.0324 = 2{,}780$ turns for the plate supply winding.

When you have re-wound the secondary, re-assemble the transformer, connect it up and see how close your terminal voltages measure to what you expect!

CHECKING BAND SPREAD

Having built our g.d.o. and power supply for it, we can proceed with the checking of the band spread of our 21 Mc. coil. It is advisable to start from the oscillator coil and work forward rather than start from the aerial coil.

Our original aim was to provide a band coverage of 20.5-22 Mc. and assuming that we propose to use an intermediate frequency of 1,500 Kc., the oscillator must cover the range of (20.5 — 1.5) to (22 — 1.5) Mc., that is, 19-20.5 Mc., or alternatively (20.5 + 1.5) to (22 + 1.5) Mc., which is 22-23.5 Mc.

Re-calculate the position for the tapping point as before explained and mount the band setting condenser, which should be a fixed type having stable characteristics. Plug the coil in, bring the tuning condenser plates fully out of mesh, switch the receiver on, and check the oscillator frequency by listening for the hetrodyne frequency meter signal. The frequency that you obtain will be the highest frequency of the LC combination, and at this point it may be necessary to alter the value of the band setting condenser to obtain the frequency you are aiming for. It will, of course, be necessary to have a suitable coil in the mixer grid circuit, but this need only be a very rough one since your hetrodyne frequency meter will "swamp" the receiver anyway.

When you have obtained the highest frequency you want, bring the tuning condenser into full mesh and then check the oscillator frequency again. From the two values of frequency obtained, it will be readily apparent whether or not your coil has sufficient band coverage. **If it does not cover sufficient range, it will be necessary to shift the tapping point so as to encompass more of the total coil. If it covers too much frequency range, reduce the value of the tapped portion of the coil.**

Having disposed of the oscillator coil, it is only necessary to calculate the tapping positions on the other coils and to check the frequency range with the g.d.o. Naturally the closer you make the band coverage of these coils coincide with the band coverage of the oscillator coil, the better your receiver will be. Patience is necessary, and what I usually do is to have one valve base which becomes the "trial coil" for each stage in turn. It is so full of holes that it looks like a sieve!

Having obtained the correct tapping point for the stage, you will make the final coil to the same dimensions and tapping point as the trial coil, so that your complete set of coils will look clean and workmanlike. Actually you will probably find that all coils, other than the oscillator, will be near enough the same, the only real difference being the value of "band spreading" condenser required for each stage. Since this condenser is of the variable type, it is only a matter of adjusting it for the particular stage concerned.

You will notice that the frequency of your coil-condenser combination when measured with the g.d.o. is different from its frequency when actually used in the receiver under working conditions. This is evidenced by the fact that the signal can be "peaked" by reducing the value of the band spreading condenser. A little reflection on this point reveals that the stray capacity of the circuit is increased due to the "space charge" effect of the valve under working conditions, as compared with the valve being cold. It therefore becomes necessary to compensate for this by reducing the value of our variable band setting condenser.

With careful work, you should now have a receiver which, so far as the r.f. section is concerned, is as good as, if not better than, any commercial multi-band receiver.

The method of band spreading outlined here has the following advantages:

(1) The coil-condenser combination can be readily calculated with a reasonable degree of accuracy.

(2) The variable tuning condenser can be any commercial type of broadcast gang and need not be of a low loss type since it is effectively in the "earthy" side of the coil.

(3) There is no need to mutilate a good broadcast type of gang condenser to obtain a low effective capacity.

(4) By using separate plug-in coils for each band, high gain and selectivity can be obtainend on all Amateur bands.

(5) The band spread can be made any desired value subject only to the availability of suitable low drift fixed condensers for the oscillator section, and your own skill and patience.

I have used this method of coil changing and band spreading on the 80, 40, 20 and 15 metre bands with complete success. The only modification to the method was that, in the 80 metre coils, I used close wound enamelled wire and fixed s.m. condensers for the band setting condenser F.C. The turns and tapping points were adjusted to suit the value of fixed condensers.

The method of approach to the problem of band spreading as outlined here should afford you many hours of interesting and instructive work; furthermore, you will be initiated into the mysteries of using a grid dip oscillator which, in my opinion, is a "must" in every Amateur shack. Its use greatly shortens the length of time necessary to obtain a given resonant frequency for LC circuits in receivers, transmitters and aerials. It will even give you a rough indication of relative Q between two coils of the same resonant frequency. Truly a very useful gadget for the constructor.

MORE ABOUT SKELETON SLOTS

BY DON B. KNOCK,* VK2NO

Further to the articles by VK5XU and myself in "A.R." for April, 1955, some additional points should be of interest. An article in "Wireless World," by B. L. Morley, deals with some interesting characteristics. Briefly the points are:—

● The electric and magnetic fields are interchanged when changing from a dipole to a slot.

● In the case of the half wave dipole, the impedance increases from the centre to the ends, but in the case of the half wave slot, the reverse is the case—the impedance **decreasing** from the centre to the ends of the slot.

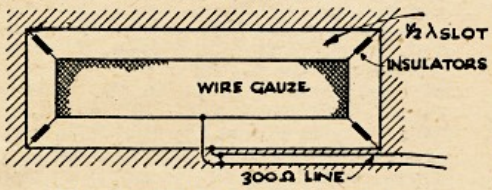


Fig. 1.—"Folded" Slot Aerial.

● The impedance of a slot can be **lowered** by folding it (by inserting a metal or wire gauze section). In the case of the folded dipole, the impedance is stepped **up** by the number of elements in the fold, but the slot works the other way.

● With a normal dipole a reflector **decreases** the centre impedance of the dipole, but with a slot the presence of the reflector **increases** the impedance. A "box" reflector would raise the impedance to about 1,000 ohms.

● On the face of this, there is room for experiment with feeder tapping positions along the slot, from the centre up (or down). Such procedure will be convenient with 600 ohm, 300 ohm, or 150 ohm feedline, but a matching stub is desirable for lower impedances.

● When a slot is "folded," as shown in Fig. 1, a good match will be obtained with 300 ohm ribbon, the centre impedance being about 250 ohms.

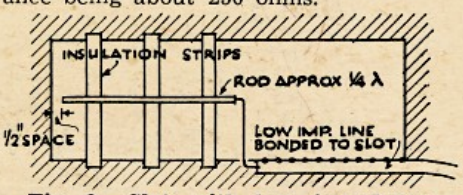


Fig. 2.—Slot with low impedance matching transformer.

It will be necessary, of course, to arrange for supporting insulation material to hold the insert metal section in position. As drawn in Fig. 1, this "folded" slot would radiate vertically polarised waves. It would need therefore for VK 144 Mc. practice, to be erected vertically in order to deal effectively with horizontal polarisation requirements.

The folding principle can be applied to the skeleton type of slot with equally effective results.

Finally, Fig. 2 shows how low impedance (70 ohm) line can be matched through a transformer—probably most effective method for using co-ax. cable.

* 43 Yanko Avenue, Waverley.

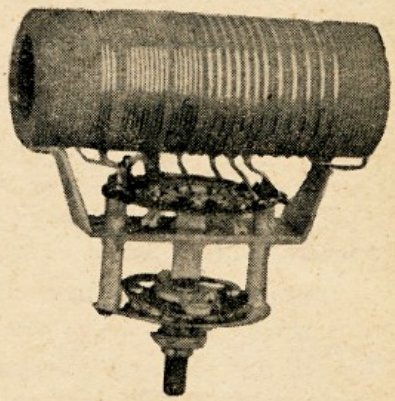
TRADE REVIEW

GELOSO PI-COUPLER TANK COIL

Back in June, 1954, we reviewed the Geloso Signal Shifter, at that time suggesting the addition of a single 807 and a set of plug-in coils would make a very compact 50 watt transmitter. Now from the same manufacturer we have the answer to the problem of a compact rig.

The Geloso Pi-Coupler Coil, Model 4/110, is wound on a ceramic former 1⅜" diameter 3½" long, on which is rigidly mounted a six-position wafer switch of the progressive shorting type. The whole assembly occupies a space measuring 3¼" x 3½" x 1¾", excluding the portion of the spindle which protrudes through the front panel.

The ceramic former is threaded 22 turns per inch, the winding being spaced to occupy 2½ inches. The coil is tapped at five, six, eight, twelve, eighteen, and twenty-seven turns. The wire spacing is varied between taps.



To resonate the coil on all bands a variable condenser with a maximum capacity of 185 pF. is required. The pi-section output condenser should have a maximum capacity of 930 pF. Under these conditions the circuit can be coupled to a line with an impedance of 40 to 1,000 ohms.

The entire unit is attractively finished and reasonably priced. Used with a single 807 or 6146, a very efficient final should result. With the possibility of t.v. in the near future, and the advantages of pi-couplers for harmonic reduction, this unit should prove equally as popular as the Geloso Signal Shifter.

We are indebted to R. H. Cunningham Pty. Ltd., the Australian Distributors, for the opportunity of examining one of these units.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

A Transmitter-Receiver Voice Operated Control Unit

BY N. L. SOUTHWELL,* VK2ZF

THE idea of controlling the switching on and off of a transmitter by means of the modulating signal is many years old, the main drawback was, that usually the operators concerned had to wear headphones to avoid feedback troubles. Feedback occurred when any sound from the loudspeaker (when one was used) reached the microphone, the v.o.c. relay being operated to bring the transmitter on.

The modern approach to v.o.c. working is to tie in the receiver switching with the v.o.c. unit and also to add, what has become known as an anti-trip circuit, to that unit.

The object of this circuit is, as its name implies, to prevent output from the loudspeaker, picked up by the microphone, from operating the voice controlled relay. The result is that you can sit back in your chair with the loudspeaker in operation and carry on a normal conversation with another station so equipped, or with a station using manual control break-in, without touching any controls. Speak, the transmitter comes on and the receiver loudspeaker is muted; stop speaking, the transmitter shuts down and the receiver comes to life. A circuit of a v.o.c. unit permitting this type of operation, and used by the writer, is shown in Fig. 1.

CIRCUIT DESCRIPTION

V1 is a twin triode, which acts as two single channel amplifiers, one channel is fed from the microphone speech amplifier, at some point before the main modulator gain control. The second channel is fed from the audio section of your receiver. The circuits from which these two amplifiers are fed should have a signal level of at least 2 volts r.m.s. for satisfactory operation of the unit to be obtained.

The amplifier outputs are each fed to the separate diodes of a 6H6 (V2) whose outputs are connected in "series aiding," so that the differential voltage between the two channels is applied to the grid of V3, in series with an adjustable negative d.c. bias. This bias voltage is obtained from the diode V4A wired across the 6.3v. heater supply, and through its output filter C9 and voltage control R11.

The thyratron relay control tube V3 will "fire" (or conduct) when its bias is reduced below approx. —1.5 volts, if a plate supply voltage of approx. 250 volts r.m.s. is used.

In operation, R11 is set so that with no output from V4A and V4B, the bias on the thyratron is a little greater than that at which the tube breaks down and conducts. Output from the microphone via V2A decreases the negative bias on the thyratron, causing it to conduct and operate relay A in its plate circuit, whilst output from the receiver via V2B increases the thyratron's negative bias, preventing it from operating.

It will be seen, therefore, that the settings of the two channel controls, R1 and R2, are to a certain degree dependent upon the setting of the thyratron d.c. bias control, R11.

Relay A in the thyratron plate circuit can be any fast acting type of relay, preferably one having a coil resistance of 1,000 ohms or more; in the writer's case a 2,000 ohm relay coil was used. This relay is shunted by the diode V4B in series with a 3,000 ohm resistor R10. These components are necessary to stop the relay chattering as it releases, due to its operating, as will shortly be explained, in a pulsating d.c. circuit.

If the relay coil resistance varies greatly from 2,000 ohms, it may be necessary to change the value of R10; its value should be kept as high as possible without the relay chattering. Should R10 be removed altogether, as it may have to be in some cases, where a low resistance relay coil is used, the action of the relay will be found to have been slowed up somewhat, due to the low resistance of V4B in its conducting direction shunting the relay. This slowing up will only be noticed on the relay release, not on its pulling up. Note that the diode V4B must be connected as shown and not reversed.

The thyratron circuit must be arranged so that the heater voltage is applied at least 10 seconds before the plate voltage. This was achieved by pressing into service a sick 12AT7 (V5) which still had sufficient emission to hold up a relay.

The heater of V5, wired for 6.3v. operation, is connected in parallel with the thyratron heater, V5 acts purely as a time delay device; any tube could be used in this position as long as it has enough emission to pull in the relay in its plate circuit. R12 and R13 should be varied to suit.

Relay B is not critical and any relay that will operate in the plate circuit of a tube will be satisfactory.

Other methods of obtaining the desired time delay will come to mind, one of which, is if a relay that will operate on only a milliamp. or so is available, it could be wired in series with the + h.t. feed to V1, thus making that tube also perform the time delay function for the V3 h.t. supply.

It will be seen that the thyratron plate feed voltage is a.c. One of the characteristics of thyratrons is that when the grid bias of these tubes is reduced below the critical voltage at which the tube "fires," the grid loses all control over the plate current, irrespective of what voltage is applied to the grid. To bring the tube back to a non-conducting condition, and once more under the control of the grid volt-

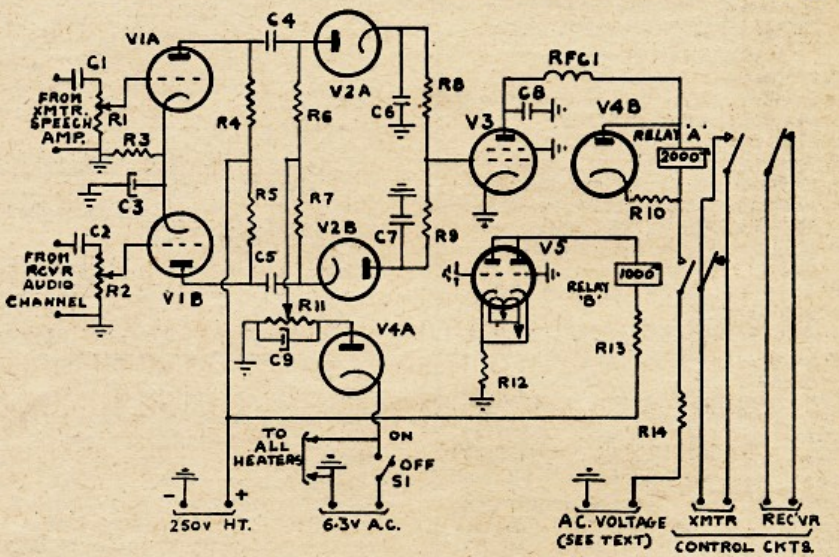


Fig. 1.—Schematic Circuit of Voice Operated Control Unit.

C1, C2, C4, C5, C6, C7—0.1 uF. 400v. working.
C3, C9—25 uF. 25v. electrolytic.
C8—0.02 uF. 400v. mica.
R1, R2—0.5 megohm pot.
R3—3,500 ohm 1 watt.
R4, R5—0.25 megohm 1 watt.
R6, R7—0.1 megohm ½ watt.
R8, R9—0.5 megohm ½ watt.
R10—3,000 ohm 1 watt (see text).
R11—0.05 megohm pot.
R12—200 ohm 1 watt.
R13—12,500 ohm 5 watt.
R14—See text.
RFC1—2.5 mH.
S1—S.p.s.t. toggle.
V1—6SN7 or 12AU7.
V2, V4—6H6 or 6AL5.
V3—2050, 2051, or 2D21.
V5—12AT7 (see text).
Relays—See text.

* 90 Dutton Street, Yagoona, N.S.W.

age, the plate voltage must be reduced to zero. The use of an a.c. plate voltage does this automatically, as the voltage drops to zero after each half cycle of a.c. The tube only conducts during the positive half cycles, so that its plate current is pulsating d.c.

From the foregoing, it will be seen that relay A will only remain operated during the period that the bias on V3 grid is less than the critical value at which the tube conducts. When the bias rises to a negative value greater than the critical value, the thyratron ceases to conduct at the end of the positive half cycle of plate voltage during which that value of bias was exceeded.

In operation, it will be found that the tubes are very sensitive and operate reliably.

Thyratrons sometimes generate a type of r.f. hash, similar to that produced by mercury vapour rectifier tubes. C8 and RFC1 comprise an r.f. filter to minimise any radiation of this type of interference should it occur. The interference is of little consequence in the Amateur shack as the receiver is inoperative whilst the thyratron is conducting.

The value of R14 will depend upon individual installations, being determined by the a.c. voltage applied to the circuit, and the operating current required by the relay used.

The voltage drop across V3 when conducting is 8-10 volts, irrespective of plate currents within the tube's rating. Telephone type relays on the disposals market usually require a minimum of 10-12 Ma. for satisfactory operation, and to ensure positive and quicker action can be run at twice that current.

The a.c. voltage for V3 can be obtained from any convenient source, usually one plate of some full wave rectifier. It is recommended that you start with R14 on the high side and reduce its value until satisfactory relay operation is obtained. If an a.c. supply of 50 volts or so is available, then R14 may be omitted completely.

ADJUSTMENT

To put the unit into service initially, set R1 and R2 to zero, adjust R11 to a bias setting just above that at which V3 conducts and operates relay A. Turn the speech amplifier on and talk into the microphone, whilst increasing R1 gain to where relay A operates quickly, each time the microphone is spoken into.

If the relay shows a tendency to be slow in releasing, increase V3 bias slightly by R11 and try a higher gain setting of R1. In cases where a bad lag is found, change C6 to a smaller value, or check the condenser you have used.

Now turn the receiver on and tune in a station at normal operating level, leave the microphone alive. It will be found that the v.o.c. relay will now be operated by the signal from the loudspeaker, picked up via the microphone; increase the setting of R2 until the relay operation ceases, the unit is now set up ready for use.

GENERAL

Should your transmitter and receiver have widely differing audio frequency responses, it may be necessary to change the value of either C4 or C5, or to connect a small condenser to ground from one of the plates of V1, so that the frequency response of the two signals reaching the two diodes of V2 are similar.

The only front panel controls required are R1, R2, R11 and S1. Some operators may even find that they only need R11 and S1 on the panel.

It is necessary that the relays controlling the transmitter and receiver operate with a minimum of acoustical noise, also the method of muting the receiver must be one which does not produce loud pops in the loudspeaker each time it operates. Failure to meet these two requirements will result in a constant on-off cycling of all the equipment at a rate determined by the mechanical set up of the relays, usually around two or three times per second.

No attempt, other than to show the writer's wiring of his relay contacts, will be made here to cover any switching schemes, as each transmitter-receiver set-up will pose its owner with a different problem. It can be mentioned that the use of an antenna change-over relay, wired in with the rest of the control circuit, has been found satisfactory, the relay used was one from an AT5 aerial coupling unit.

Properly adjusted, this unit will operate with only a barely perceptible cutting of the first syllable of the opening word of a sentence and will release immediately one ceases speaking.

VK-ZL DX CONTEST, 1955

Phone: 1st-2nd October; CW: 8th-9th October

[Owing to the late arrival of a copy of these rules, it is regretted that they did not appear before this issue.—Ed.]

N.Z.A.R.T. and W.I.A., the National Amateur organisations in New Zealand and Australia, invite world-wide participation in this year's VK-ZL DX Contest.

Objects: For the world to contact VK and ZL stations and vice-versa.

When: **Phone**—24 hours from 1000 G.M.T., **Saturday, 1st October,** to 1000 G.M.T., **Sunday, 2nd October. C.w.**—24 hours from 1000 G.M.T., **Saturday, 8th October,** to 1000 G.M.T., **Sunday, 9th October.**

Note.—Duration for all contestants is 24 hours.

RULES

1. There shall be three main sections to the Contest:—
   (a) Transmitting C.w.
   (b) Transmitting Phone.
   (c) Receiving, Phone and C.w.

2. The Contest is open to all licensed Amateur transmitting stations in any part of the world. No prior entry need be made. Mobile Marine or other non-land based stations are not permitted to enter the Contest.

3. All Amateur frequency bands may be used, but no cross band operating is permitted.

4. C.w. will be used for the second week-end and phone for the first week-end. Stations entering for both phone and c.w. sections must submit entirely separate logs for each.

5. Only one contact per band is permitted with any one station for Contest purposes.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor, and must submit a separate log under his own call sign.

7. **Cyphers**: Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of 5 or 6 figures will be made up of the RS (telephony) or RST (c.w.) reports plus three figures which may begin with any number between 001 and 100 for the first contact, and which will increase in value by one for each successive contact, e.g., if the number chosen for the first contact is 053, then for the second contact the number must be 054, for the third, 055, and so on. If any contestant reaches 999, he will start again with 001.

8. **Scoring**: For VK and ZL stations ONLY—Fifteen points will be scored for the first contact on a specific band with any overseas country; fourteen points will be scored for the second contact on the same band with the same country; thirteen points for the third, and so on to the fifteenth contact, which will score one point. All contacts with that particular country on that band will thereafter count one point each. This scoring procedure will be repeated on each band to encourage multiband operation. There will be no VK-ZL contacts between each other. Official A.R.R.L. countries list will be used.

NOTE.—Points will not be entered in the log for each contact—totals for each country will be shown in the summary. **Each Call Area in the U.S.A. will be a "country" for scoring purposes.**

Overseas Scoring: One point will be scored for each contact on a specific band with any VK-ZL district. The final score will be derived by multiplying the total contacts on all bands by the total number of VK-ZL districts worked on all bands. VK-ZL districts are: ZL 1, 2, 3, 4; VK 1, 2, 3, 4, 5, 6, 7, 9.

9. **Logs**: (a) Logs must show in this order—date, time in G.M.T., band of operation, call of station worked, serial number sent, serial number received.

(b) A separate log must be submitted for each band. For each band an analysis sheet must be given showing—list of countries worked with numbers of contacts for each country and points claimed for each country worked and total points for that band.

(c) A summary sheet to show—
   1. Station call sign.
   2. Name and address of the operator.
   3. Phone or C.w.
   4. List of points claimed for each band.
   5. Grand total of points.
   6. Brief description of equipment used during the Contest—transmitter, power, antennae, etc.

(d) A declaration that all Contest Rules and Regulations for Amateur Radio in your country have been observed, and that the log is correct and true to the best of your belief.

10. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

11. The ruling of the Federal Contest Committee, W.I.A., will be final. **No** dispute will be entered into.

12. **Awards**: (a) W.I.A. award certificates to the top scorer on each band, and the top scorer in each VK and ZL district. Awards will be announced independently by W.I.A. and N.Z.A.R.T. Additional certificates will be awarded depending upon the number of logs received.

(b) **Overseas Stations**: Certificates to the highest scorer in each country (each Call Area in U.S.A.). Additional certificates will be awarded depending on the number of logs received, e.g. certificates may be awarded to the highest scorers on different bands.

13. **Entries from all stations should be post-marked on or before 31st October, 1955, addressed to Federal Contest Committee, Box 1234K, G.P.O., Adelaide, Australia.**

RECEIVING SECTION

1. The Rules for the Receiving Section are the same as for the Transmitting Section, but it is open to all members of a shortwave listeners' society in the world. No transmitting station is permitted to enter for the Receiving Section.

2. The Contest times and logging of stations once on each band per week-end are as for the Transmitting Section. Logs will take the same form as the Transmitting Section.

3. To count for points, the call sign of the station being called, the strength and tone of the calling station, together with the serial numbers sent by the calling station must be entered in the log. Scoring will be on the same basis as for transmitting stations.

4. It is not sufficient to log a station calling CQ.

5. VK receiving stations may log overseas and ZL stations, and ZL receiving stations may log overseas stations and VK stations.

6. Certificates will be awarded to the highest scorers in each country. Extra certificates may be issued, depending upon the number of entries received.

VICTORIAN SCRAMBLE

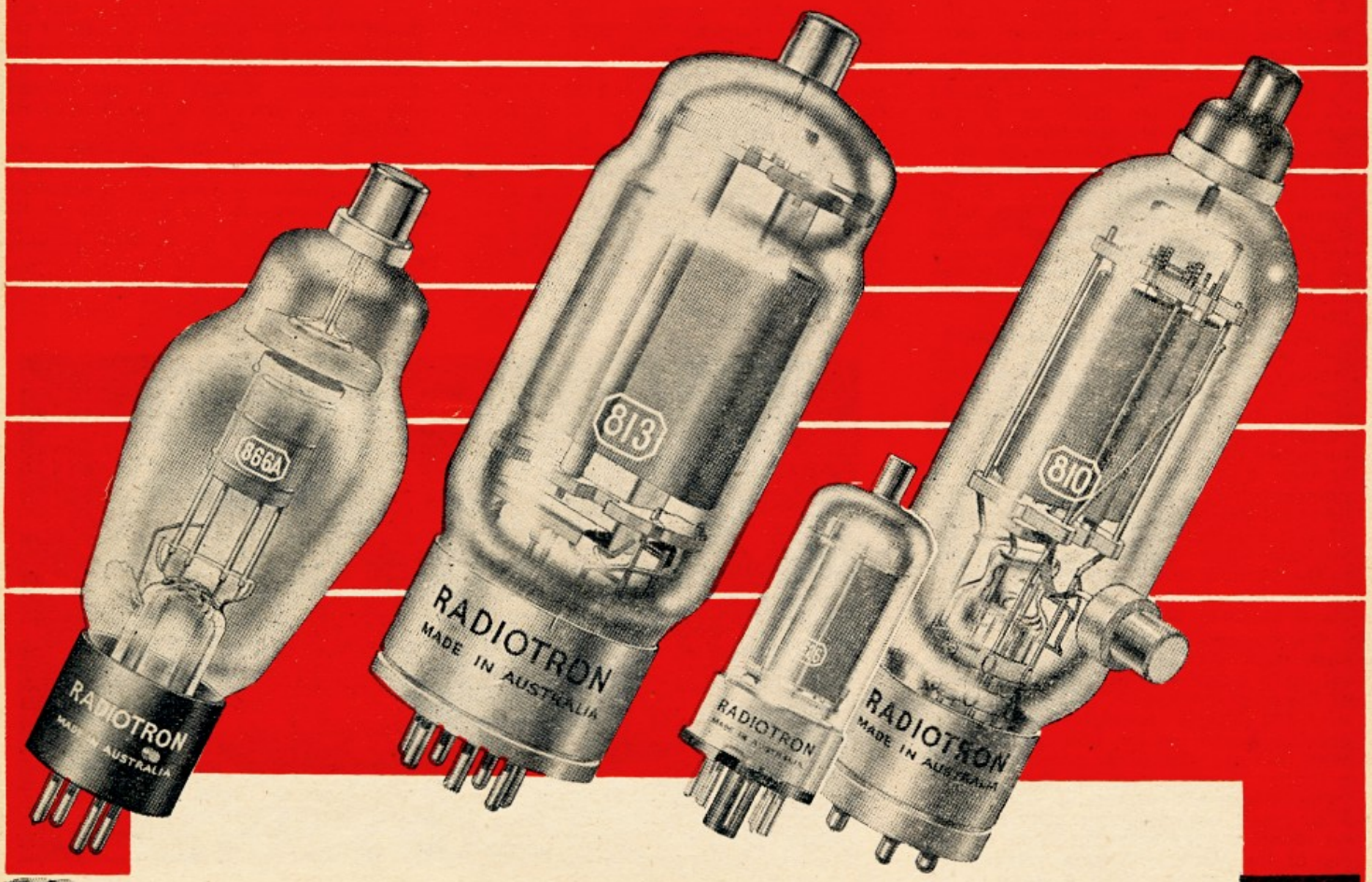
Victorian Amateurs are reminded that the Bi-monthly Scramble takes place on Monday, 3rd October, 1955, from 2000 to 2200 hours E.A.S.T.

This event has been organised to foster Amateur Radio activity on all frequency bands.

Refer to last month's "A.R." (page 12) for the rules of this Scramble.

Will we be hearing you?

RADIOTRON POWER VALVES



Today's high standards of radio performance are dependant upon the use of first quality components.

Radiotron valves are manufactured to exacting standards which ensure you of the ultimate in performance at all times.

Be sure of the quality and consistency of your signals by using Radiotron Power Valves.

Important: When ordering valves, be sure to mention "Amateur Radio" so that priority can be given to your order.

AWV **RADIOTRON**

AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

ALL MODELS EXHIBITION, MELBOURNE, 1955

AUGUST 25 saw the opening of the All Models Exhibition, in which the Victorian Division of the Wireless Institute of Australia again participated, at the Exhibition Building, Melbourne. This Exhibition, organised by the Australian Association of Model Societies, under the direction of the Rev. L. L. Elliott, to raise funds for the Victoria Missions to Seamen, featured displays of hobbyists' work with representation by seven societies, e.g., model trains, power boats, aircraft, cars, ship modelling, etc., in addition to the Institute's presentation of Amateur Radio. It is a triennial event and the third one in which the W.I.A. has taken part.

Our exhibit represented the culmination of months of hard work by Len Moncur, VK3LN, and his helpers. This year an International Trade Fair was combined with the exhibition, and over 90,000 people had passed through the turnstiles by the time it ended on September 3. The Institute's exhibit, a photograph of which appears herewith, occupied the main stage of the building. This is a rather difficult position to fill, yet one which lends itself rather well to the striking and commanding display which has always characterised our stand at these shows.

Three large wooden screens covered with dark blue decorative paper were set up in a flattened U shape to the rear of the stage floor, with QSL cards from over 100 different countries arranged in checker board fashion thereon together with notices detailing some Institute activities, surmounted by the heading "The Wireless Institute of Australia." Four small beams continuously rotating on model towers were mounted on the top of the screens. A large representation of a receiver with a knob being turned by a motor driven "hand" indicated the names of various countries through the edge lit dial escutcheon. To the rear, a curtain with sundry decorations provided a backdrop, and the caption "The World at Your Fingertips" hung in a large arc over the receiver. Viewed as a whole, the exhibit had a most noticeable and attractive appearance.

Transmitters for 80, 40, 20 and 2 metres were in operation to provide a demonstration to the public of Amateur communication, and a large amount of equipment, particularly v.h.f. mobile and portable gear, test equipment, etc., from country and metropolitan Amateurs, was on display. Amateur t.v. was featured in a separate enclosure towards the front of the stage. The "novelty" section again attracted much interest and proved popular, too; with the staff happy to demonstrate the intriguing gadgets! It followed the lines adopted at the previous show with some additions, e.g., there was an instrument for checking human reaction time.

A copy of the morse code with a key and audio oscillator which, judging by the noise it emitted, had practically constant use, with young and old lined up and anxious to try their hand at sending. Of topical interest was a transistor audio oscillator and key, working from a couple of tiny dry cells and providing a surprisingly loud signal to a standard earphone. Photo-electric cell and capacity operated devices, geiger counter, c.r.o's., etc.

Those responsible for the l.f. communication section worked hard in the face of the usual difficulties of electrical noise, but with the aid of v.h.f. relaying managed to make 281 local and DX contacts and kept this section running smoothly. Aerials used were a three element beam for 20 metres and dipoles for 40 and 80 metres. These alone represent considerable effort requiring many trips up and down nearly 200 steps and landings and arranging co-ax feedlines about 270 ft. long for each aerial down to the stage. Incidentally, it would appear that a home-built low frequency Amateur receiver suitable for conditions such as exhibition operating is still somewhat of a rarity.

The V.h.f. Group, for its 2 metre working, used a three bay turnstile antenna on the roof. Contacts to metropolitan stations, mobiles and a couple of nearer country stations were made without difficulty. A "5 over 5" rotary beam on a mast at one end of the stage, Selsyn controlled from the operating position, demonstrated yet another interesting device to the public. Some contacts also were made using this set-up.

Certificates have been issued to all exhibitors and special VK3WI QSL cards are in the hands of the QSL Bureau for all contacts.

Operating appears to be a very popular duty with the staff, but we must realise that at such a show we have a duty to perform both to the public and to the W.I.A., i.e. to invite questions, explain Amateur Radio, demonstrate gear, etc. Many enquiries were received concerning Institute membership, the A.O.C.P. class, etc., from young and old.

Thanks are due to all those Amateurs, both full licensees and limited, associates and members the S.w.l. Group who assisted in the preparatory work and general staffing and finally the dismantling of the stand and aerials at the conclusion on the Saturday evening and Sunday morning. Also to Phyl Davies (Mrs. VK3JD) for the colossal job she did towards the running of the exhibit.

To those who signed off with many "final finals" from contacts with VK3WI, but who patiently returned to acknowledge greetings to the members of the public who constantly appeared on hearing a voice from the loudspeakers; to the many Amateurs who made their gear available for the exhibit; for the donations of equipment which were required on the spur of the moment for some alteration or addition to keep things running smoothly—thanks. Such a show is indeed a credit to the W.I.A. and to Len for his hard work and enthusiasm throughout. Can we keep it up? Yes, of course, but your constant and earnest assistance is necessary. Start building that gear now!!

W.I.A. Victorian Division's Stand at the All Models Exhibition.

Please Note the New Address of the

INWARDS AND OUTWARDS

VK3 QSL BUREAU

C/o W.I.A. VICTORIA DIVISION, 191 QUEEN ST., MELBOURNE

As from 1st October, 1955, all QSL Cards for VK3 will be handled from the Victorian Division's rooms at the above address.

QSL Bureau Managers and members are requested to forward all future cards and correspondence to VK3 QSL Bureau, C/o. W.I.A. Victorian Division, 191 Queen Street, Melbourne.

Are You Complacent About TVI?

BY ROBERT H. BLACK,* VK2QZ

IT will not be many months before television broadcasts begin in some of the major capital cities. In the United Kingdom and the United States the advent of television has caused severe restriction on the full enjoyment of Amateur activities; unless we take preventive measures the same will apply in Australia.

It is the duty of all Amateurs to put their house in order before these transmissions begin. With this end in view an educational programme dealing with television, t.v. receivers, t.v.i. and its prevention and cure has been commenced in the N.S.W. Division on the advice of its B.c. and T.v.i. Committee. We have been fortunate in having the services of Max Sobals, VK2OT, and Norm Beard, VK2ALJ, both lecturers at the Petersham Technical College. This programme is now well under way.

Figures from overseas show that Amateur transmissions cause a very small percentage of the total amount of t.v.i., but when the figures are viewed from the Amateur point of view it has been found, in some areas, that more than one half of Amateurs have had t.v.i. trouble before curative measures were applied.

A survey of b.c.i. has recently been made amongst the Sydney members of the W.I.A. Now, you would think that b.c.i. was a thing which should not trouble anyone these days—we've had years of experience with it and know all about its cause and cure. Well, have a look at these figures obtained from a questionaire given to members at the Divisional and V.h.f. Group meetings in August, 1955.

1. **Incidence of b.c.i. by band and power input.**

Band	No. using Band	Mean Power Input	Permanent B.c.i. Cases No.	Mean Power	Incidence %
80	21	56 w.	2	50 w.	10
40	36	58 w.	5	73 w.	14
20	40	65 w.	4	70 w.	10
15	11	76 w.	2	75 w.	(20)
10	7	80 w.	1	88 w.	(14)
6	12	58 w.	0	—	(0)
2	34	33 w.	1	88 w.	3
Total	161		15		9.3%

Incidence of permanent b.c.i.—
HF 12%
VHF 2%

2. **Incidence of b.c.i. causing limitation of Amateur activity.**

8 of 62 (13%) in the group suffer at the present time from limitation of activity due to b.c.i.

3. **Type of transmission causing b.c.i.**

Amplitude modulation 8
Phase modulation 1
CW 1

4. **Relations with the complainant and P.M.G. Department notification.**

Relations with the Complainant	P.M.G. Notified No	Yes
Good	4	0
Bad or indifferent ..	0	3

One case was reported to the P.M.G. Department, but relations with complainant not stated.

5. **Previous history of b.c.i.**

Of the 62 Amateurs completing the questionaire, 16 (25%) had had b.c.i. which they had cured. Two of the group have amicable b.c.i.

The method of cure of the b.c.i. has been:

Transmitter adjustment 5
Receiver adjustment 13
Unstated 1

6. **Incidence of past and present b.c.i.**

Of this group of 62 Amateurs, 21 (34%) have or have had b.c.i. trouble. If the two cases of amicable b.c.i. are added, this figure rises to 23 of 62 (37%).

We can draw some conclusions from the results of this survey, remembering, of course, the population from which the figures were obtained: One in three Amateurs have had b.c.i. at some time or another or still have it; 10% of Amateurs are restricted in their enjoyment of Amateur privilege because of b.c.i. which they have not cured. This permanent trouble is mainly confined to those using the h.f. bands and is almost absent from the v.h.f. bands. Look at what happens when the P.M.G. Department is notified! Finally, b.c.i. is not necessarily associated with the use of high power, except perhaps on 2 metres.

Now, there are two in this group who live in amicable relationship with their neighbours though still causing b.c.i. for which no cure has been requested. If it were t.v.i. this happy circumstance would not continue. It appears that interference with the t.v. picture will upset your neighbour much more than your voice coming in on his favourite b.c. programme—compare the large number of amateur art critics with the small number who dare to give an opinion on music!

One in three of the group surveyed have had b.c.i. trouble. You may be sure that the proportion who will suffer from t.v.i. trouble will not be smaller unless active steps are taken in its prevention.

Prevention depends in the first place upon an educational programme for Amateurs so that they can bring themselves up to date with transmitter construction practice in this television age. The Amateur must put his own house in order. This educational programme can be supervised by the State B.c. and T.v.i. Committee; the more prevention is instilled into the Amateur, the less will be the curative work required later. This is the approach of the B.c. and T.v.i. Committee of the N.S.W. Division.

In the second place, we look to the Federal Amateur body to do all that is possible to ensure that there are certain minimum standards of quality required for t.v. receivers, and that other relevant technical and legal details are brought to the notice of the appropriate governmental body.

Will your transmitter be free from t.v.i. troubles when the first broadcast comes on the air? We can solve this t.v.i. problem, but only if we are fully aware of the urgency of the matter and get ourselves organised before it occurs.

*2 Yerton Ave., Hunter's Hill, N.S.W.

AMATEUR CALL SIGNS

FOR MONTH OF JULY, 1955

NEW CALL SIGNS

VK—

New South Wales

2AVE—C. W. Meech, Officers' Mess, R.A.A.F. Base, Uranquinty, N.S.W.

Victoria

3LC—A. W. H. Chandler, 36 Seymour Ave., Malvern, S.E.3.
3OS—R. O. Scott, 38 Grey St., St. Kilda.
3YY—N. S. Smith, 14 Durham Rd., Surrey Hills, E.10.
3AGA—M. N. Russell-Clarke, 127 Manningham St., Parkville.
3ANH—J. C. Humphreys, Station: Miner's Rest, via Ballarat; Postal: Staff, R.A.A.F., Ballarat.
3ZBC—A. K. Hore, No. 8 Married Quarters, R.A.A.F., Ballarat.
3ZBY—A. I. Morrison, 72 Park St., Sth. Yarra.

Queensland

4DK—J. A. Kelly (Dr.), District Hospital, Ayr.
4FR—W. R. Franzi, 24 Mary St., Innisfail.

South Australia

5LP—R. L. Paech, 66 White Cres., Seacombe Gardens.
5ZBK—E. J. Kenny, 5 Perth St., Ferryden Park, Adelaide.

Territories

9AS—J. A. Whittaker, Station: A.P.C. Station, Morehead River, via Rokie, T.N.G.; Postal: Seismic One, C/o. Aust. Petroleum Co., Port Moresby, T.N.G.

CHANGES OF ADDRESS

VK—

New South Wales

2KW—L. D. Wilson, Lot 10, Ross St., Epping.
2QG—R. C. B. Lillie, 6 Grandview Gr., Seaforth.
2XO—J. M. Retallick, 248 High St., Coffs Harbour.
2AAQ—R. E. Hookway, Campbell Hill Rd., Chester Hill.
2AEJ—J. W. Smith, 260 Lakemba St., Lakemba.
2AJP—J. Weaver, 20 Coromandel St., Goulburn.

Victoria

3KI—T. P. Kirby, 79 Normanby Rd., Kew.
3AJU—W. D. Guild, C/o. Bedford Looker Rd., Montmorency.

Queensland

4XH—H. A. Perkins, 98 Queens Rd., Hermit Park, Townsville.

South Australia

5AF—A. S. Little, 2 Martin St., Northfield.
5CT—C. Hewitt, 31 Darlington St., Clearview.

Territories

9TZ—C. D'Evelynes, Rugli, via Baiyer, via Lae, T.N.G.

CANCELLED CALL SIGNS

VK—
2BB—A. H. Brown.
2RJ—J. C. Bray.
2SN—M. C. Griffin.
2VO—C. J. McPherson.
2AAS—J. A. Whittaker. Now VK9AS*.
2AGS—A. G. Sabin.
2AHO—G. J. Parker.
2AND—B. H. Anderson.
2ALA—A. G. H. Robertson.
2ATI—Newcastle Technical College.
3EG—I. V. Miller.
3EO—R. A. H. Russell.
3FP—D. Burkitt.
3NS—S. B. Levings.
3ZN—M. S. Israel.
3ACF—V. C. Forbes.
3AIK—J. B. Kelleher.
3APT—P. J. Tozer.
3AXM—E. J. Mulholland.
4DW—C. D. Wright.
4IC—M. N. Russell-Clarke. Now VK3AGA*.
4PM—C. W. Meech. Now VK2AVE*.
5FR—W. R. Franzi. Now VK4FR*.
6XE—F. H. Doherty.
*See New Call Signs.

FOR MONTH OF AUGUST, 1955

NEW CALL SIGNS

VK—

New South Wales

2EG—W. J. Storer, 39 Ilka St., Leichhardt.
2ER—P. C. James, 12 Stanley St., Chatswood.
2SN—M. C. Griffin, 183 Clarinda St., Parkes.
2AJO—J. W. S. Edge, Wallace St., Coolamon.
2AKC—J. C. Kearines, Post Office, Tomingley.
2APW—A. F. Pyett, 357 Maroubra Bay Rd., Maroubra.
2ATV—K. L. Green, Keats St., Byron Bay.
2ATY—E. H. T. Burt, 35 Paul St., Auburn.
2AUK—J. K. Fullagar (Dr.), 420 Orange Grove Rd., Booker Bay, via Woy Woy.
2AZG—J. R. Grouse, Brent St., Boggabri.

Victoria

3JP—W. J. Carlyle, 21 Purcell St., Benalla.
3SU—S. G. Edwards, R.A.A.F., "Frognall," via Canterbury, E.7, Vic.
3AJV—K. G. Avery, 426 St. Kilda Rd., Melbourne.
3AQH—L. W. Hoobin, Heatherset Rd., Sassafras.
3AXU—C. A. Cullinan, Snr., 6 Grant St., Colac.
3AYS—G. S. B. Horrocks, 31 Stockdale Ave., East Bentleigh.
3ZAI—J. L. Occolowitz, 128 Gaffney St., Coburg.
3ZBN—G. A Lane, 12 O'Shannessy St, Nunawading.
3ZBP—B. D. Alexander, Station: "Wahroonga," Beaufort Rd., Skipton; Postal: Box 15, Skipton.
3ZBU—N. R. Dench, 27 Glenbervie Rd., Strathmore.
3ZBV—J. Quigg, 29 Alamein St., Morwell.
3ZBX—J. R. Wales, 24 Park Lane, Mt. Waverley.

Queensland

4PJ—P. J. Chapman, 63 Bundoch St., Belgian Gardens, Townsville.

South Australia

5CW—W. C. Clifton, 11 Heathpool Rd., Heathpool.
5HR—W. L. Heinrich, 17 Rosilind St., Kensington Gardens.
5ZBT—G. L. Taylor, 224 Goodwood Rd., Millswood Estate.

Western Australia

6EA—A. A. Entwistle, 22 Charles St., Midland Junction.
6ZAN—R. J. Skevington, 19 Bedford St., East Fremantle.

Tasmania

7ED—W. E. Bovis, "Skipton," West Tamar Rd., Tatana.
7WT—R. A. Milledge, 16 Winmarleigh Ave., Taroona.

Territories

9TZ—C. D'Evelynes, Rugli, via Baier, via Lae, T.N.G.
9XK—S. R. Coleston, C/o. D.C.A., Port Moresby, T.N.G.

CHANGES OF ADDRESS

VK—

New South Wales

2AM—D. G. Cuffe, 1 Carcoola St., St. Ives.
2LY—H. C. Crisp, 449 Orange Grove Rd., Orange Grove, via Woy Woy.
2MU—L. J. Case, 37 Beach St., Woolongong.
2OX—J. Stewart, 53 Burwood Rd., Billfield.
2SJ—G. A. Clipsham, Denison St., Finley.
2TC—H. J. Taylor, "Eastdene," Bunda Noon.
2WP—W. F. Potter, 2 Patricia Ave., Charlestown.
2AGR—A. Hughes, 10 Seaton Ave., Wahroonga.
2AHW—H. T. J. Stone, C/o. O.T.C.A. Radio Station, Bringelly.
2AQW—J. S. Walker, 19 Lower Wycombe Rd., Neutral Bay.
2ASB—S. E. Brown, 12 Denman St., Yarralomla, A.C.T.
2AVT—V. E. Tierney, 6 Beach Rd., Edgecliffe.

Victoria

3DQ—C. S. Donoghue, 51 Bourneville Ave., East Brighton.
3QN—P. E. Maplestone, 42 Berkley St., East Oakleigh.
3ACV—J. T. Wilson, Bucknall St., Carisbrook.
3AJU—W. D. Guild, Block 237, Red Cliffs.
3ALZ—I. F. Berwick, Station: Lot 35, Loongana Ave., Glenroy; Postal: 19 Martell St., Moonee Ponds.
3APK—P. C. Perkins, Clifford Farm, Mt. Moriac.
3ARI—R. M. Tutton, 206 Stewart St., East Brunswick.
3ASH—R. R. Elkin, 496 Moorabool St., South Geelong.
3AVZ—North Suburban Amateur Group, 6 Sylvester Gr., East Preston.
3AWJ—D. J. Williams, 8 St. Hubert's Rd., East Ivanhoe.

Queensland

4CW—J. Worth, Station: "Amshak," Sydney St., Bundaberg; Postal: Box 254, P.O., Bundaberg.
4PR—W. J. Rafter, 25 Willandra St., Alderley.
4WD—W. G. Dodd, 34 Lloyd St., Brighton, Brisbane.

South Australia

5AE—F. A. Eastick, Station: 148 Bath St., Alice Springs; Postal: C/o. P.O. Alice Springs.
5BJ—M. Bradley, 3 Coppin St., Dunleath Gardens.
5BX—A. L. Saunders, 2 Murdoch Ave., Plympton.
5ET—E. Van Tijn, Woodburn Ave., Blackwood.
5FF—R. F. Farmer, 18 Googona St., Woomera.
5HJ—H. J. Champion, 18 Tarranna Ave., Ascot Park.
5ZAA—I. B. Wall, 34 Church Ter., Walkerville.

Western Australia

6SK—A. A. Skinner, 106 Prinsep St., Norseman.
6WL—L. McGeoch, White St., Brookton.

CANCELLED CALL SIGNS

VK—
2EC—E. C. Crouch.
2KJ—K. C. Avery. Now VK3AJV*.
2TZ—C. D'Evelynes. Now VK9TZ*.
3EA—E. Anderson.
3KG—K. L. Green. Now VK2ATV*.
3XK—S. R. Coleston. Now VK9XK*.
3XQ—A. Baldock.
3ZQ—H. K. Hutchinson.
3AAC—W. C. Clifton. Now VK5CW*.
3AFU—J. K. Fullagar (Dr.). Now VK2AUK*.
5CR—C. R. Cheel.
6GS—G. S. B. Horrocks. Now VK3AYS*.
6RE—R. F. Carville.
7XW—C. A. Cullinan, Snr. VK3AXU*.
1EG—W. J. Storer. Now VK2EG*.
9AB—A. B. Bunting.
*See New Call Signs.

DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Mc.: Some good break-throughs were observed to a number of continents. Conditions to **South Africa** and **Europe** existed between 1900z and 2100z, while the **North American** continent was represented around 0730-1100z.

7 Mc.: Conditions on this band were in accordance with what can be expected for this time of the year. **Europe** was available on both the short path (1900-2200z) and long route (0600-0800z). Times for **North America**, the **Pacific Islands**, and the **Far East** were also quite normal (0600-1400z).

14 Mc.: The improved general conditions on this band held throughout the month of August. Long-path conditions to **Europe** (0500-0800z) were predominant, while **North American** stations appeared to be workable during the entire 24 hours. Long-path conditions to **North America** were noticeable between 2200z and 0000z.

21 Mc.: This band showed openings to **North America** and the **Pacific Islands** in the usual manner. Times were for **North America** 2300-0400z and for the **Pacific Islands** 2200-0700z, approximately.

27/28 Mc.: No reports were received on these bands.

NEWS AND NOTES

ZC5CT is expected to stay in British North Borneo for four months. He has been heard on 14 Mc. phone. (from WIA-L3007)

Comoro Island is supposed to be on the Amateur Radio map under the prefix FB8. Details will be given as soon as they become available. (from the N.C.D.X.C.)

AC3PT is reported to be active on 14100 Kc. phone, but changes to c.w. on request. (from S.C.D.X.C.)

OY7ML should now be active on 7020 Kc. (from 2AMB, ZL3KN)

Single sideband suppressed carrier operation is gaining more and more friends. There is no doubt that its DX efficiency is by far better than that of normal modulation. In this country as well as overseas a small percentage of Amateurs have been specialising in this field. Recently **VK3WR** contacted **CP5EF** on s.s.b., which is believed to have been the first two-way s.s.b. QSO between Bolivia and Australia. Congratulations!

Here is more comprehensive news on **XW8AB**. The operator is Marcel Zinck, ex-DL5BS. His operating frequencies are 14000, 14012, 14050, 14080, and 14100 Kc. Apparently, his correct address is now Box 165, Vientiane, Laos. (from 3AHM, N.C.D.X.C.)

BV1US replies to QSL cards on receipt. His frequency is 14250 Kc. where he uses phone only. (from N.C.D.X.C.)

Egypt is represented by **SU1IC** around 14050 Kc. (from N.C.D.X.C.)

Please do your part in the clean-up of our bands! Keep those reports on b.c. and other commercial stations operating in exclusive Amateur bands rolling in!!

QTHs OF INTEREST

(From 3JA, 3AHM, N.C.D.X.C., S.C.D.X.C.)

SU1IC—Ibrahim M. Charmy, 1 Mohamet Pasha St., El Aguza, Egypt.
BV1US—M/Sgt. G. Carlson, RA 33036702, Army Sect.-Formosa, A.P.O. 63, San Francisco, U.S.A.
OY7ML—Martin Hassen, Box 184, Thorshaven, Faroer Islands.
VQ5FS—Tierueq, Box 118, Jinja, Uganda.
FY7YE—Via W4ML.
EA9DP—Adolpho Perez Real, Box 213, Melilla, Spanish Morocco.

ACTIVITIES

3.5 Mc.: Laurie **2AMB** reports VK9AU, and Kel **3AEP** follows with W7JC around 0730z. Glen 3ZBJ heard KL7 on phone. Eric **BERS195** mentions VK9AU, and **3AHH** heard Europeans and ZS's.

7 Mc.: **2AMB** reports on c.w. G6TC*, JA8AE*, CO8FH*, KV4BK*, LU1EAJ*, LU4HU*, LU5YD*, DU7SV*, VEs*, KP4CC* and CO8EN, KM6AX, XE2OK, KP4ZC, and on phone VR2CG*, KC6CG*, HP3FL*, and ZM6AR. Neville **2APL** worked VE3*, and Jack **3WR** phoned with HP3FL*. Tim **3ZBO** heard JA1-5-6-8, VE2, VE3, DU7SV, YJ1AA, KL7s, KM6AX, KJ6OJ, I1TBU, VP2. **BERS195** adds Europeans CO6PP, KP4KD, KP4ZC, KR6LJ, KL7AKE, KM6AX, DU7SV, KZ5CS, XE2OK, YV1AD. **Dave Jenkin** reports KP4CC, VE3, JA8AE, VP5DC, DU7SV, VE2, KM6AX, KP4BU, VE3PK, DU9WX, and LA1CB.

14 Mc. C.w.: **2AMB:** DL6GP*, ON4FU*, G6VQ*, and XE2MJ. Jack **3JA:** CS3AC*, DL3DU*, DL4EU*, DL1EE*, F3DM*, F3AD*, F8WK*, F8XS*, FK8AL*, FK8AH*, G6TM*, G2GK*, G3DQC*, HB1KU/HE*, KW6BS*, PX1EX*, VU2JG*, YU2HW*, ZS5ND*, ZS1BK*, ZS6CY*, ZC4PB*, ZD2WAF*, ZS8L*, YJ1DL*, FA8ZZ*, VR2CW*, 9S4AX*, F3BR*, ON4SN*, ON4FU*, 3V8AB*, VO6AE*, ZB2I*, OD5AB*. Ivor **3XB:** OE*. Allan **3AHM:** XW8AB*, HB1KU/HE*, YU4BN*. John **5HI:** ZS2BC*, DL1EE* and Gs*. **BERS195:** CS3AC, CT1JS, DU1OR, DU1VQ, DU7SV, DL1HH, CE3DZ, FK8AB, FK8AH, FK8AQ, KJ6BH, KJ6FAB, KL7ADR, LU5JF, LU9XA, PA0BS, VR2BZ, VR2CS, YJ1DL, VS2EI, DJ1BZ, EI5C, SM5AKH. **Dave Jenkin:** CR7AF, PJ2AV, DU7SV, DU3DO.

14 Mc. Phone: **2AMB:** ZM6AT. **2APL:** KW6BO*. Neil **3HG:** CO2BL*, 5A2TL*, Gs*, KL7ML*, OE5JK*, SP3AK*, CN8EJ*, CT1IC*, TG9TU*, VE2*, DL7AG* and Ws* over the long path. **3JA:** CO2YZ*, DL4XK*, EA9AZ*, FK8AB*, KG1AA*, I1BDV*, L1AMU*, XE2NT*, ZS6OY*, ZS2FA*, ZS2ND*, VS6CW*, ZS2BC*, TG9TU*, I1MD*, I1MT*, G3BM*, F8CH*, F8HC*, OH5NW*, GM3DHD*, OH6QI*, OH2OV*, OH3QN*, SM5MR*, OH5NK*, G2AMG*, LA5YE*, OH3SS*. Stan **3TE:** CN8MM*, CO1AF*, I1TBU*, KL7s*, KT1WX*, OH5OP*, PJ2CA*, XE1DU*. Jack **3WR:** CP5EF*. Harold **3AHC:** CN8MM*, VQ4EO*, 5A4TX*, I1AMU*, I1ZCT*, ON4RC*, EA5EI*, SM6SA*, HB9LU*, G3GYH*, CN8FI*, KL7s*, KA*, KX6*, KP4ACI*, VS2EW*, KR6AF*, CO1AF*, F3DJ*, F7AH*, YV5DL*, YV5AO*, KH6*, VS6BE*, KT1WX*, OH5OP*, OH1PN*, G6BS*, SM5RY*, G3DPJ*, I1CTE*, G6XL*, KZ5CS*, HC1EP*. Austin **5WO:** CO2CY*, G2HFO*, I1WN*, I1ZCT*, I1MD*, ZS1SW*, ZS6CY*, ZS6YW*, ZS6AFA*, OQ5AO*. **BERS195:** KJ6FAB, VS6BE, VS6CW, ZM6AT. Ian **WIA-L3007:** I1BEM, KL7s, KJ6BG, MS4PB (?), ZC5CT.

21 Mc.: **2APL:** KH6*, W5*, W6*, W0*, and VR2CG. **Dave Jenkin:** KH6, W7, W5.

27 and 28 Mc.: No reports have been received.

Rare QSLs were received by: **2AMB:** CO7PG, FK8AC. **3JA:** KG1AA, ZC4CK, KM6AX. **5WO:** OD5LX, 5A4TK, MP4QAH, KV4BB, KG4AP, CN8MM, OA4ED, 5A3TZ. **BERS195:** KJ6AZ, KP4YT, VS1GP, ZS3AC, ZC5CV, ZS5PM.

Thanks to W6YY, the Northern and Southern California DX Clubs, and VKs 2AMB, 2APL, 3HG, 3JA, 3TE, 3WR, 3XB, 3AEP, 3AHC, 3AHM, 5HI, 5RK, 5WO, 3ZBJ, 3ZBO and BERS195, WIA-L3007, Dave Jenkin.

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.
* Call signs and prefixes worked.
z — zero time—G.M.T.

D.X.C.C. LISTING

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3BZ	3	176	VK3ATN	26	153
VK4HR	12	176	VK4KS	9	152
VK6RU	2	168	VK6KW	4	150
VK4FJ	21	164	VK3LN	11	141
VK3EE	10	163	VK4RW	23	141
VK3JD	1	155	VK3AWW	14	140
New Members					
VK9DB	31	105	VK7RX	32	107

C.W.

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3BZ	6	222	VK3CX	26	175
VK3FH	15	205	VK5BY	45	172
VK4HR	8	200	VK2EO	2	170
VK3KB	10	200	VK5RX	23	159
VK4FJ	29	191	VK6RU	18	158
VK4EL	9	175	VK5BO	33	157

OPEN

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3BZ	4	231	VK2NS	16	195
VK2ACX	6	225	VK3HG	3	181
VK4HR	7	214	VK4EL	10	175
VK4FJ	32	206	VK6KW	13	171
VK6RU	8	203	VK2DI	2	170
VK3JE	12	198	VK4DO	15	168
New Members					
VK7RX	60	112			
Amendments					
VK2ACX	6	225	VK9DB	59	139

SHORT WAVE LISTENERS' SECTION*

VICTORIAN S.W.L. GROUP'S FIRST ANNUAL REPORT

It is now 12 months since the Short Wave Listeners' Group was formed within the Victorian Division. August, 1954, saw the first meeting in the Institute Rooms, when some 30 interested persons responded to an invitation to attend the inaugural meeting which successfully launched the Group. A monthly meeting was decided upon and was arranged for the last Tuesday in each month. This has provided members with a useful period each month to hear and to discuss activities during the previous month. Over the year these meetings have afforded members the opportunity of hearing an excellent series of lecturettes by the Secretary, Gerry Lane, on short wave listening, a very interesting demonstration by the V.h.f. Group and a demonstration of the beam antenna on v.h.f. A construction evening provided members with an evening to devote themselves to building new equipment or to watch others, thus providing others with ideas and evaluating the performance of their respective apparatus.

The S.w.l. Notes were inaugurated in "Amateur Radio" and your correspondent, John Wilson, has done a fine job with the little help from members. Unfortunately this page has received little support from members. It was for your benefit that the notes were commenced and it is hoped that your support will be more in evidence for this coming year. Your report, no matter how small, will be welcome, so chaps send in your monthly log. Your contribution will be acknowledged each month in the columns.

The first Contest was run during January and March, 1955, with three months for collection of QSLs. The response was disappointing, however those taking part were fully rewarded for their efforts. A new Contest was announced for September, 1955.

In February a visit to the Australian Broadcasting Commission studios in Melbourne was arranged when a large party had an interesting time seeing for themselves what goes on behind the microphone. Further visits to places of interest will be arranged during the coming year.

Since the Group was formed, four members have obtained their Limited Licenses—David Rankin, VK3ZAQ; Ian Woodman, VK3ZBI, David Tanner, VK3ZAT, and recently, Secretary Gerry Lane, VK3ZBN. They are to be congratulated on their success. Our aim is to be a breeding ground for Amateurs and in the first twelve months we have made a good start.

Mention must be made of our enthusiastic members, Geoff Morris and Frank Nolan. These chaps have a great handicap in being blind, but their enthusiasm and excellent monthly reports are an inspiration to all members. It is indeed a pleasure to have them in our Group.

Finally I wish to thank each and everyone for their support and interest during the year. To Arthur 3AHD (who has been available at each meeting for advice and operation of 3WI), Ron 3OM, Col 3FO and others whose names and calls escape my memory—thank you chaps. Thanks also for all those on the executive for their co-operation during the year. Especially Secretary Gerry Lane, whose help and interest during the year have contributed towards the success of the Group. Thank you for re-electing me for the next year and I trust that the ensuing 12 months will see us grow still stronger.

Our strength is now 28 financial members and seven unfinancial members—I trust the latter will do the right thing. Your official numbers are available only to the financial members. We hope to see more and more become members. Bring your friends along to the meetings!

Our best wishes to the Groups in VK5 and other States contemplating forming Groups—VK4 and VK2. It is hoped other States will follow suit.

—Leonard Poynter, President.

* Compiled by John Wilson, WIA-L3004, 37 Rayment Street, Alphington, N.20, Victoria.

VICTORIAN GROUP'S MEETING

This Group met in the club rooms, 191 Queen Street, Melbourne, on the last Tuesday of August and those present were allotted nights of duty at the VK3 Division's stand at the All Models Exhibition. To all the s.w.l's. who gave assistance at the show we give you a big thank you for helping out.

A big welcome is extended to Ted Bayley, of 709 Macarthur Street, Ballarat. We welcome you to the VK3 Division and hope to hear lots of news from you. Ted uses a 9 tube Hallicrafters Sky Champion, beam is a W8JK, and he is also interested in 144 Mc. Ted, all the best of DX for the future!

SOUTH AUSTRALIAN S.W.L. GROUP

From WIA-L5004 we received a report of the last VK5 meeting. This meeting was held at the Central Methodist Mission room with an attendance of 10. Len took along his Eddystone receiver and tuned across the bands for all to hear.

HEARD ON THE BANDS

21 Mc.: Not so active.

14 Mc.: Very active between 1500-1700 EST and 2200-2330 EST. Ted Bayley reports hearing YV5, ZL1-2-3, W0-6-7, VR, VK1-9, YJ1, and KL7. From WIA-L5004: 4S7, DU1, JA1-2-3-6, KA0-2-3, KC6, KH6, KL7, KP1, KR6, KW6, KZ5, VE5-6-7, VR2, VS6, VU7, W0-2-4-6-7-8-9, YE9, YV4, ZL1-2-3-4, ZM6, ZS1. Tom Osborne heard VE7, VR3, KA3, G5, ZM6, KP4, VK1.

3.5 Mc.: WIA-L3004 reports hearing ZL, VK2-3-4-5-6-7-9, JA. WIA-L5004: ZL1-2-4, VK1-9.

BROADCAST SHORT WAVE

Tom Osborne, WIA-L3022, reports Radio Thialand on 11.7 Mc. at S6 from 2045-2115 EST. Radio Ceylon 9820 Kc., S3-4, 2300 EST. Voice of Indonnesia, 9710 Kc., S7, 2100 EST. Tokyo, 11750 Kc., S6, 1900 EST. Switzerland, 11865 Kc., S8, 1700 EST. VOA, 11790 Kc., S7, 2000 EST. United Nations, 9600 Kc., S7, 0630 EST. HCJB (Quito), 11915 Kc., S7, 1800 EST. VOA (Los Angeles) in the 19 metre band, with musical programme called "Music Line U.S.A.," from 1730-1800 EST, strength 7-8, call sign is KCBR and KNGH.

Canada has changed its programme times from 1845 EST to 1830 EST, and now transmits the usual half-hour daily programme from 1830-1900 EST on stations CKLO (9.63 Mc.) and CKNA (5.97 Mc.) to Australia and New Zealand.

S.W.L. MAGAZINE REPORTS

If you tune your receiver across the bands at any time during your leisure, write down what you hear, even if you only listen for five minutes, and send your loggings to John Wilson, 37 Rayment Street, Alphington, before the first of each month.

FIFTY MEGACYCLES AND ABOVE

FREQUENCY CHANGE FOR FIFTY MEGACYCLES BAND

56-60 Mc. available as from 1st November, 1955!

50-54 Mc. closes on 31st January, 1956!

NEW SOUTH WALES

At the last meeting of the V.h.f. Group, Dr. Bill Davis, of the C.S.I.R.O., delivered a lecture on the growing of Transistors. All present voted the lecture enlightening and instructive. A vote of thanks was given to Dr. Davis by Barry 2ZAG. Many specimens of different transistors were shown to the meeting and also a complete broadcast rx, which performed very well. There were 45 members present.

A night Hidden Tx Hunt was held on Wednesday, 31st August. 2ANF was the hidden tx and there were seven car loads of searchers out. The tx was found by 2LG/M, 1st, in 56 mins.; 2HL/M, 2nd, 58 mins.; 2AFM, 3rd, 76 mins. The start was made at Burwood Park at 8 p.m. and the tx was found on the northern side of the Sydney Harbour, at a place called Manns Pt. The distance from the starting point and the tx was 12 miles. This night proved to be most enjoyable and finished up with supper.

A most interesting Field Day is to be held on 11th Sept., when experiments will be conducted to prove the practicability of Slave Antennae. These are known as Passive Relays. Stations will be out at selected spots in the field, some will be high up in the Mountains, and others will be down in bad locations; signals will be sent over and around mountains by means of these slave antennae. Home stations are invited to be in the Field Day.

On 3rd October the big Spring Field Day will be held. An attempt will be made to put a signal into VK4, both via a North Western route, and also via a North Eastern route. All Northern Stations are asked to be on deck to help put this message through. Mt. Ebor will have a station located there, 5,250 ft. up, 2HO/P will be accompanied by 2APQ. Also, 2AOA will be up on Blue Knob, near Taree. 2ANF, 2HL, 2LG, 2ZAG and others will man the mountain tops to make this day a success. 2ATS at Inverell, 2AQI at Armidale, 2AHH at Kempsey, and we hope many other country and coastal Amateurs will show up and make the Field Day the best yet.

The 580 Mc. band has come to life again, Steve 2YR has been heard on xtal control; 2XX has been on with a mod. osc.; 2APQ has been playing around with a mod. osc.; 2HO and 2ANF have been listening; 2ABZ has also been busy getting ready for a flutter on this band.

2ZAR and 2ZAG have been working hard on a xtal cont. 1200 Mc. station each, and by some of the work done already, I understand that it's top notch. Good work, Barry and Bob.

Your late scribe, Harry 2AJZ, has resigned from the committee on account of personal duties and illness. We regret his resignation and we do hope that his stay in hospital will not be long and that some day he will be able to find time to rejoin the Group Committee. Thanks, Harry, for your past service, from all.

There will be a Hidden Tx Hunt on 19th October. Further details not yet available.

On 1st November there will be a Grand Opening Contest on the 56 Mc. band, in the form of a two-hour Scramble, starting at 8 p.m. The same rules as used on 2 mx band. Cross band will be permitted. Points to be awarded are as follows: 5 points for contacts on 56 to 60 Mc., 3 pts. from 50 to 56/60, and 1 pt. for 50 Mc. contact only. There are five possible ways to make points.

There will be a Fox Hunt on 27th November and 2AZO will be the Fox. No details as yet.

The next meeting of the V.h.f. Group will be at Petersham Technical College on 7th October, when Max Sobels will be the lecturer and his subject will be T.v.i. Suppression and Allied Subjects. This should prove a most interesting night.

VICTORIA

To add variety the last fox hunt was run in the form of a competition, two points being awarded for a catch on the run and one point for a catch while the fox was stationary, also penalty points were deducted for any difference in mileage to that of the fox car. The first hiding place was a very cunning one, it was by the Yarra River near the Melbourne High School and the car was well hidden from the road by a steep embankment. The first one to eventually locate him was Graeme 3ZAA. The second hiding place was in a reserve in Hawthorn beside the Gardiner Creek. On discovering him they complained that the paddock they had come across was very wet and muddy, not realising that they had tramped right through the creek; such is the enthusiasm on a fox hunt. At the final location, which was held at the home of David 3ZAY at St. Mary's Vicarage in Caulfield, the fox hid inside the grounds of the vicarage, which are very large and very thickly wooded. 3OJ acted as control station and was ably assisted by 3ZAJ, 3ZBJ and 3ZBE—many thanks chaps.

Twenty-eight attended the hunt and during supper the outright winner for the evening was announced. This was Ray 3KD and Norm Dench, second place went to David 3ZAY, and third place to Laurie 3ALY. We wish to thank the Rev. and Mrs. Cooper and David for their friendly hospitality in making their home available to the Group to conclude a pleasant evening.

At the last V.h.f. Group meeting we had a very welcome visitor in the person of Barry 2ZAG who gave a very interesting talk on the activities of the Group in his Division. Several of the members brought in pieces of equipment and gave a demonstration and short talk. They included 3ALZ with his grid dip meter, 3ZAC who demonstrated the modifications of a glide path rx for the 288 Mc. band, 3ZAJ with his grid dip meter and power supply, and 3YS displayed 3DG's home-spun, but very professional looking, microphone. Dick has used a 105 millimeter shell case for the base and a piece of tubing for the stem which support a crystal insert mounted in a circular case, the whole being chrome plated and in all an excellent piece of workmanship.

A discussion also took place on the Olympics and it was resolved that the Group would co-operate with the committee.

Ron 3ZBH who recently spent a week-end in Adelaide visited several of the VK5 vh.f. men whom he found were most enthusiastic about 288 Mc. Ron informs us that 5PU has totalled up 60 contacts on that band. He was very interested in the gear used by 5MT and 5RO who both operate on 6, 2, 1 and ½ mx. 3RI is very active on 288 Mc. Amateurs meet in at the 3RI rooms every Thursday evening and any who are interested are most welcome. New calls heard on 2 mx recently are Reg 3ZAD at Canterbury, Tim 3ZBO at Frankston, and also 3EL. Warrick 3ZBD, who has his tx working on 288 Mc. has had crossband contacts with Lance 3AHL and Evan 3AAP on 144 Mc. David 3ZAQ has invested in a QQE03/20 and expects to run about 45 watts. Keep a lookout for 3ZBM and 3AWC who are active on 2 mx from Bendigo and are hoping to make some Melbourne contacts. The good wishes of the Group are extended to Jim 3ABA, whose wedding is to take place shortly.

Evan 3AAP back after 2 yrs., now has XYL and new QTH; runs 15w. to p.p. 7193s; rx is 6J6 with lines ¼ inch dia. and ¾ inch space; ant. 4 el. Yagi. Rex 3ZBK is using 6AK5 r.b. with ⅜ inch bars and has dipole 30 ft. up; no tx as yet. Bert 3AAF has tx trouble. Geoff 3AUX been on holidays. Bob 3ZAN is putting 832 final on tx. Mac 3QO repairing antennae. Ron 3ZBH and Lance 3AHL also active—as usual. Dreamed that 3AFJ was on 288 Mc.—'Twas only a dream though Sir!

The V.h.f. Group had a very excellent display at the All Models Exhibition, in fact over 60 per cent. of the exhibits were from the V.h.f. Group members. Pride of place was taken by two tx's, one built by Fred 3YS, and the other by Joe 3TO. Joe's complete station was of his usual excellent workmanship, displaying on the rx home-built Collins type dial mechanisms and every detail displaying perfect finish. The tremendous activity on the v.h.f. bands certainly impressed many of the low frequency addicts and a number expressed the desire to build equipment for the 2 mx band.

SOUTH AUSTRALIA

50 Mc.: There is nothing much to report on 50 Mc. as there are only a few stations operating on this band and then only for short periods. The usual regulars are 5RO, 5KC, 5AX and 5MT.

144 Mc.: The main line of activity last month has been in the mobile field. Many tests have been carried out by Col 5RO and your scribe. One night during August, your conductor went mobile on 144 Mc. using a very temporary hook-up incorporating an SCR522 tx and rx, complete with a three el. beam. This set-up worked very well as might be expected; the only bad part was the auto ignition noise due, of course, to poor shielding and by-passing. Ken 5KC is progressing steadily with his mobile gear which will consist of a xtal converter using 6AK5s as r.f. stage and mixer into a car b.c. set. The tx will be a modified SCR522; this should be a good combination.

Clem 5GL has completed his mobile gear and he is using a xtal converter as above, but the tx in Clem's case is a low powered job using 6J6s throughout. Input to the final runs at about 2 watts.

Neil 5ZAW has just about completed his 100w. final using p.p. 6146s. He plans to use the existing low powered tx both for mobile and home station use. Bob 5RI at Mt. Bryan has completed his 6146 final and has been heard in Adelaide at good strength by 5RO and 5MT. Ern 5EN at Pt. Pirie has also been heard in Adelaide on 144 Mc. Your scribe has not had the opportunity to listen, but Col reports an S3-S6 signal at his QTH. Ern is using an 829B running about 80w. input and I believe the antenna is a 5 over 5 stacked array.

288 Mc.: Jack 5LR reports this band as being fairly active, with stations to be heard on every night of the week. Those stations operating are 5LD, 5FM, 5PU, 5IZ, 5LR, 5WR, 5ZR, 5BY, 5LN and 5LB.—5MT.

WESTERN AUSTRALIA

At the last meeting of the V.h.f. Group, Don 6HK gave a very interesting talk on the development of mobile operation on v.h.f. in this State and the types of gear used. Don showed the meeting Tom 6TR's mobile tx and xtal converter for 50 Mc. and Don's own 144 Mc. rx. These were viewed with much interest. Don gave many suggestions to those interested in building up similar gear. Frank 6CC then showed his "halo"—a folded dipole wrapped into a circle. Checks with this on 50 Mc. showed that it gave excellent all round coverage and had the advantage of horizontal polarisation. As Frank's for 6 mx was only about 18 inches in diam. (he used two capacitive end loading plates about 5 inches in diam. and pruned them till the dipole loaded), the suitability of such an antenna for mobile operation was very evident. The thanks of the Group went to Don and to Frank and his XYL, who were our hosts.

144 Mc.: This month two new call signs appeared on the band. Dave 6ZAQ is using an 832 final and an AR301 rx. Antenna is only a dipole at the moment, but plans are afoot for a beam. Ron 6ZAR is using a QQC04/15 tripler final, a 4 el. beam and a double converted AR301. John 6ZAC is busy building his rx and hopes to put out a signal as soon as studies permit. Rolo 6BO has had further checks with Wally 6WG in Albany without success. Wally has not yet got the QQE06/40 in operation, so the chances of contacts are still low. However, the more encouragement we in the city can give to the country boys the better it will be for us all! Thanks Rolo!

288 Mc.: Don 6ZAV has joined the xtal controlled group with an 832 final running about 15w. Don has worked all the active 288 Mc. stations with the exception of Wally 6ZAA in Fremantle. Frank 6FB is a new one using this band and has worked a number of the boys. He is using a mod. osc. Len 6ZAT is using a 6J6 mod. osc. and no antenna! Len has not assembled a beam yet and is using the lechers he used to measure his frequency to radiate his signal. Despite this, he has put very strong signals to Rolo 6BO and Don 6ZAV. Frank 6CC has now worked both 6ZAV and 6BO. Don 6HK has revamped his xtal converter and may re-build his tx after he finishes his mobile 2 mx station. Wally 6ZAA has a QQC04/15 tripler final on 288 Mc., but has yet to work out of Fremantle. What about a portable jaunt to Rottnest someone?

Stan 6ZAS has been asked by the V.h.f. Group to determine the v.h.f. records made by Western Australian Amateurs. Anyone with claims should contact Stan. It is hoped to publicise these records so that those new to the v.h.f. bands can strive to do better.—6ZAA.

50 Mc. W.A.S.

Call	Cer. No.	Add. Cntr.	Call	Cer. No.	Add. Cntr.
VK2WJ	13	4	VK2AEZ	10	1
VK3PG	5	3	VK3XA	11	1
VK2VW	9	3	VK3GM	12	1
VK4RY	2	2	VK3ACL	14	1
VK4HR	4	2	VK3ZD	16	1
VK5LC	1	1	VK2HO	17	1
VK6DW	3	1	VK2ABC	8	
VK3RR	6	1	VK2WH	15	
VK3HT	7	1			

"ACOS" CRYSTAL MICROPHONES and MICROPHONE INSERTS

A Complete Range For Every Purpose

DESK OR HAND MICROPHONE

MIC 36

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

£6/18/6

HIGH QUALITY MICROPHONE

MIC 16

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level —65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2¼" spherical diameter.
Connector—Standard international 3-pin.

£24/19/6

GENERAL PURPOSE MICROPHONE

MIC 35

£2/15/-

The MIC 35, undoubtedly the best value ever offered, is ideal for amateur transmitters, public address, etc. Housed in an attractive die-cast case, it features a high sensitivity and substantially flat characteristics. Provided with a built-in shunt resistance of 2 megohms, it will, when connected to the grid of the input valve, give a substantially flat response from 50 to 5000 c.p.s.

SPECIFICATION

Output level: —55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2⅛" x ⅞"

TABLE AND STAND MICROPHONE

MIC 22

This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, F = 80 ÷ R, where F = c.p.s., R = megohms. An adaptor (floor mounting) is available at low extra cost.

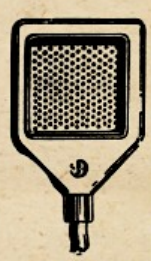
SPECIFICATION

Output level = —50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.
Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

£9/18/6

LAPEL MICROPHONE

MIC 28



£5/19/6

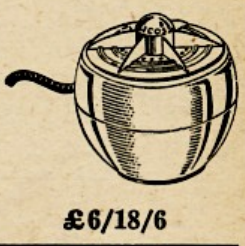
Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. —55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ⅝" thick.

HAND OR DESK MICROPHONE

MIC 33



This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

£6/18/6

MICROPHONE INSERTS

(MIC 32 illustrated)

CRYSTAL MICROPHONE INSERTS

These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 19/4 and MIC 32 Inserts, **£2/15/6**; all others, **£1/19/6**.

MICROPHONE INSERTS

(MIC 23 illustrated)

EXCLUSIVE AGENTS: **AMPLION (A'SIA) PTY. LTD.** SYDNEY, AUSTRALIA

FEDERAL, QSL, and DIVISIONAL NOTES

FEDERAL

AMATEUR RADIO IN THE ARMY

It has been noted with interest that Army Headquarters will consider granting permission for the establishment of Amateur Radio Stations on Army property.

Active support of Amateur Radio Clubs is indicated and in view of the circumstances, some excellent opportunities for experimental work will be available to Service personnel.

LIST OF SUCCESSFUL AMATEUR CANDIDATES

The following is a list of candidates who were successful at the examination for the Amateur Operator's Certificate and Amateur Operator's Limited Certificate, held on 19th April, 1955.

New South Wales

E. Pearce, 19 Meehan Gardens, Narrabundah, Canberra, A.C.T.
*W. J. Stewart, Hotel Acton, Canberra, A.C.T.
F. W. Fowler, 4 Thompson Cres., Tamworth.
R. D. Martin, House No. 20, Radium Hill, S.A.
*J. T. Jarrott, Gordon St., Culcairn.
A. Maxwell, 24 Coleman St., Westmead.
*B. H. Ridley, 4 Woodstock St., Bondi Junction.
*F. J. Caton, 23 Jefferey Ave., Nth. Parramatta.

Victoria

J. C. Humphreys, Staff, R.A.A.F. Station, Miner's Rest, via Ballarat.
*A. K. Hore, No. 8 Married Quarters, R.A.A.F., Ballarat.
V. G. Wyatt, 38 Queen St., Cobram.
G. A. MacFarlane, Pearsondale, via Sale.
F. Clark, 164 Middleborough Rd., Blackburn.
N. A. Town, "Weald Cottage," Leith Road, Montrose.
*R. A. Bailey, 15 Riverside Rd., Ivanhoe.
*E. L. McLean, 1 Acacia St., Murrumbeena.
*J. L. Occolowitz, 128 Gaffney St., Coburg.
*A. I. Morrison, 72 Park St., South Yarra.

Queensland

*J. B. Hargreaves, 5 Herbert St., Wandal, Rockhampton.
J. A. Kelly, District Hospital, Ayr.

South Australia

*J. McG. Moffatt, 8 Swan Ter., Port Adelaide.
*L. E. Coombe, 44 King St., Mile End.
*G. L. Taylor, 224 Goodwood Rd., Millswood Estate.
*P. M. Williams, 42 Harrow Rd., Somerton Park.

Western Australia

*J. F. Chambers, 17 Leon Rd., Dalkeith.

Tasmania

D. Johns, 28 Waterworks Rd., Dynnyrne, Hobart.
*P. J. Edwards, 9 King St., Sandy Bay, Hobart.

REGION I. DIVISION

In view of the present interest being taken in Regional Conferences, it seems appropriate to publish the Constitution of Region I. Division of the International Amateur Radio Union (I.A.R.U.).

Article 1: The name of this organisation is the Region I. Division of the International Amateur Radio Union, hereinafter called the Division.

Article 2: The objects of the Division are to promote the general interests of all the I.A.R.U. Societies in Region I. (as defined by the International Telecommunications Union) and to represent their interests at I.T.U. Administrative Conferences.

Article 3: The membership of the Division shall consist of Member Societies of I.A.R.U. in Region I.

Article 4: A Conference of Member Societies shall be held at an interval of not more than three years in one of the countries within Region I.

Article 5: Every Member Society of the Division is entitled to appoint representatives to attend Region I. Conferences and each Member Society shall have one vote at Plenary meetings.

Article 6: The President of each Region I. Conference and the Chairmen and Secretaries of the Committees set up at the Conference shall be elected at the first Plenary meeting and shall act only for the duration of the Conference.

Article 7: At each Conference an International Executive Committee, consisting of a Chairman, Vice-Chairman, Honorary Secretary and at least two (2) members, shall be elected by the Member Societies present. The Committee shall have full executive powers between Conferences.

Article 8: The Honorary Secretary of the Executive Committee shall act as the Conference Secretary.

Article 9: The Chairman of the Committee shall have general supervision of the affairs of the Division and shall preside at meetings of the Committee.

Article 10: The Vice-Chairman of the Committee shall act in the absence or disability of the Chairman.

Article 11: The routine affairs of the Division shall be undertaken by a Secretariat, hereinafter known as the Region I. Bureau.

Article 12: The Honorary Secretary of the Committee shall be responsible for all funds belonging to the Division and for the management of the Bureau. He shall deal with all general correspondence appertaining to the Division and shall maintain a record of all actions taken and shall keep minutes of all meetings of the Committee. He shall maintain a close liaison with I.A.R.U. Headquarters and shall forward to the Secretary I.A.R.U. reports on the proceedings of the Division.

Article 13: Neither the Division nor the Committee shall make decisions which are contrary to the Constitution of the I.A.R.U. and they shall not interfere with the internal affairs of Member Societies.

Article 14: Member Societies at a Conference may represent and submit proxy votes on behalf of Member Societies not present.

Article 15: Decisions taken at Conferences shall be by simple majority of votes. Decisions regarding financial matters require a two-thirds majority.

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FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Applications for all Awards that are handled through the W.I.A., should now be made to the recently appointed Awards Manager, Gordon Weynton, VK3XU, 30 Park Street, West Brunswick, N.10, Victoria. Previously applications for W.A.C., W.B.E. and D.U.F. were handled initially by the Federal QSL Manager. The alteration has been effected to introduce uniformity.

Norm Buzacott, VK3TD, recently made a trip to New Caledonia and New Hebrides on an inspection of Meteorological and Radio Stations. He met local Amateurs at both places.

Bill Fouhey, ZL2LB, the N.Z.A.R.T. QSL Manager, is having a spot of bother with his local authorities over postage rates on outward QSLs. If the anticipated losses prove too high, it is possible that they may have to drop their outward department.

George Delahoy, VK3ADZ, ex-VK1DY, has broken the silence that has surrounded his whereabouts since his return from Heard Island early this year. George, writing from his home address, Eden Park Road, Whittlesea, Victoria, under date of 4th September, states he has had a quiet but very busy time since his return. Besides acquiring a new car, he has built a new shack and garage. Unfortunately the batteries of the 32 volt home lighting plant are in too poor condition for George to get VK3ADZ on the air at present, but he is assembling 12 volt power gear and expects to be active by the end of this year. He has had 1000 VK1DY cards printed and is moving them out as opportunity permits.

A poignant note is struck on the unusual QSL card of JA1AA. On the face, besides a picture of Hisao and his four motherless children, there is a Scripture quotation from Job 1.21. On the reverse, in addition to the usual contact particulars, there appears details of his departed XYL Michiko who lost her life when run down by a taxi on her way home from a women's Amateur Radio class held at JA1CO in 1954. The QSL card is a memorial to her memory and was designed by a daughter, Kumiko. We all feel deeply for you Hisao, in the tragic loss of your loved one.

The QSL Manager for Malta advises that the published address of the Malta Bureau is incorrect. The correct address is Robert F. Galea, ZB1E, "Casa Galea," Railway Road, Birkirkara, Malta.

KP4YT, P.O. Box 1447, San Juan, Puerto Rico, complains of the difficulty in extracting cards from VK. He has had a total of 10 contacts with VK2, VK3 and VK4 stations and so far not one card received. He would like a little action by some of the operators concerned.

Frank Ellesmere, VS1GP, of R.A.F., Changi, Singapore, is active on 7 Mc. and is particularly desirous of contacts with VK3APP and VK2AUD.

ZC3AC, V. E. Mathews, of Christmas Island, in a recent QSL states he is still active on 14 Mc. c.w. He adds that ZC3AA is the only other ZC3 station but is inactive at the moment.

FEDERAL AWARDS

D.X.C.C. AWARD

The following are the alterations and additions for the month:—

No. 6	VK2ACX	Open Division	225	Countries.
No. 59	VK9DB	,, ,,	139	,,
No. 31	VK9DB	Phone ,,	105	,,
No. 32	VK7RX	,, ,,	107	,,
No. 60	VK7RX	Open ,,	112	,,

Congratulations to VK9DB and VK7RX who are the first in their Divisions to gain the Phone D.X.C.C.

W.A.V.K.C.A. AWARD

The following have qualified for this award during the month and their Certificates are in the mail:—

Vincent L. Rosso, W5KC	Certificate No.	4
R. F. Czeikowitz, W6ATO	,,	5
Harold A. Boyd, ZL1CH	,,	6
Albert H. Hix, W8PQQ	,,	7
Mark H. Churton, ZL1TB	,,	8

V.H.F. CENTURY AWARD

Applications for this award will be receivable after the rules have been published in "Amateur Radio." Aspirants for this award are requested to withhold their cards in the meantime.

—G. Weynton, VK3XU, Awards Manager.

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NEW SOUTH WALES

The August meeting of the N.S.W. Division was held at the usual venue on 26/8/55, the meeting being opened by the President, Jim Corbin, 2YC, shortly after 8 p.m. In the absence of the Secretary, his place on the rostrum was taken on this occasion by Charlie Quin, 2AWQ. A notable visitor in ZL1BY was welcomed by the President and the members assembled.

The evening was then devoted to the lectures arranged, in the first place the Divisional B.c.i. and T.v.i. Officer, Bob Black, 2QZ, gave a very interesting lecture on the suppression of b.c.i. and t.v.i. Bob stressed the need for members to report their b.c.i. to the committee so that advice may be given to rectify the fault wherever it lies, to give those who have volunteered for duty with the committee practice in curing the cases of b.c.i. reported and in providing the committee with material on which to work to make the organisation efficient and to give the committee the necessary information so that their method of approach to manufacturers and dealers can be formulated. More volunteers are required to help in this matter which will indeed become a vital one in the future.

Norm Beard gave a lecture on the Trials and Tribulations of t.v.i. and dealt with the generation of harmonics in transmitters very effectively. Following on this, Joe Reed, 2JR, gave a talk well illustrated with slides on his recent visit to New Guinea, which of course was well received as usual.

The meeting closed at the usual late hour and was concluded in the usual manner, in Gloucester Street.

DOINGS OF THE TOWN

2ID had a cubicle quad, but dropped it down gently following the windy days. 2APT still doing things to the modulator with good results. 2AUR gets out reasonably well even on the long path; some of you fellows should look to your laurels, if any. George will be QRU Inverell soon. 2AAB made a reappearance on 20 mx recently, same old signal. 2AGW has been suitably welcomed to the home hearth again following on his trip overseas. 2ACD has been off colour, now learning all about v.f.o's. A present visitor to Sydney is VR3C, Phil is having a good time and getting around the western suburbs.

2SV back on the air after holidays among the snow, sounds in the pink. 2FM back at work after illness and hospitalisation, better now. 2JP still going strong, putting a fine signal out these days. 2ADL gets on late at night these days. 2GE has a real beam up atop the towers now, seem to have seen one of those somewhere Max. 2ACN rarely heard, what is the matter Ralph? Now that the bands are opening we hope to hear a few more of the boys around. 2YI doing well with the new beam, knocks them off like nobody's business.

SOUTH WESTERN ZONE

By the time this is read the South Western Zone Convention at Albury will be only days off. We are expecting a good attendance to do battle for the trophies.

The gale force winds of last month played havoc with beams and antennae, not only in this zone but we hear in others. Your scribe had to dismantle 144 and 20 mx stacked beams. Don 2RS also suffered, loosing his 144 Mc. beam while away on holidays; not a good sight Don on returning. Don had quite a time with his 144 Mc. portable gear on his holidays, working about 30 to 40 144 Mc. stations around Sydney and further afield; good work Don.

From Griffith news is that the Z boys are at long last getting gear to go on 144 Mc.; hope to hear signals from Griffith soon lads. Another Z call will be soon on 144 Mc. in the name of Jim Pratt, of Illabo; should be easy to get a few contacts when you fire up the 829 Jim. From here, when we get the 144 Mc. beam back again on the tower, we hope to give the v.h.f. gang a better signal with the new p.a. QQE06/40. Ray 2APZ is leaving us in September, bound for Broken Hill. We are sorry to lose you from the zone Ray. On behalf of the zone gang, I would like to wish you all the very best in your new venture. We hope to hear the familiar voice from Broken Hill when you get settled in.

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VICTORIA

STATE CONVENTION

As most members of this Division will already know, this year's State Convention is to be held in **Bendigo** on **Saturday** and **Sunday, 19th** and **20th** of **November, 1955.** If you intend coming to Bendigo for that week-end, I would appreciate it if you could write me a letter or note on the back of a QSL informing me of the following details:

1. Number of people coming to the Convention, OMs, XYLs, and harmonics.
2. Number who will be attending the Dinner.
3. Number who will require hotel accommodation reserved for them. (Please enclose 10/- per person, booking fee.)

I would like those people to write by 28th October, at the very latest. Until anybody is responsible for the organisation for a Convention, they cannot realise just what is involved. The hotel proprietors are very helpful, but we do require these definite details by 28th October, so please help by writing **promptly** in order that adequate first-class accommodation may be secured for all.

Name and address to forward particulars is: Neville Stilwell, 283 Boundary St., Bendigo.

Details of the programme and meeting place, also confirmation of your accommodation, will be sent immediately all details are known. Please send your QSLs by **28th October.**

VICTORIAN DIVISION ANNUAL DINNER

Friday, 4th November, at 6.30 p.m.

The Annual Dinner of the Victorian Division will be held at the Hardware Club, Cr. Hardware Street and Little Bourke Street (just around the corner from the Institute rooms) on Friday, 4th November, at 6.30 p.m.

Tickets at £1 per head are available from the Secretary and early application is requested.

NEW ADDRESS FOR VK3 QSL BUREAU

As from 1st October, 1955, all QSL Cards for VK3 (both Inwards and Outwards) will be handled from the Victorian Division's rooms.

QSL Bureau Managers and members are requested to forward all future cards and correspondence to VK3 QSL Bureau, C/o. W.I.A. Victorian Division, 191 Queen Street, Melbourne, C.1.

Those members who wish their cards forwarded on to them by post, are requested to forward a stamped addressed envelope to the above address.

SOUTH WESTERN ZONE

Once again there isn't a great deal of activity in this zone, in fact not as much as we would like, so what about it, chaps? Kevin 3AKR was heard on 80 mx the other night, which is the first time for a while, so let's hear you on the hook-ups Kevin as you were very regular once. Norm 3EQ was unlucky with the windy weather as it cleaned up his antenna farm, but we have them all installed again and hope to be active once again. 3WI was heard here in Warrnambool whilst on the air from the All Models Exhibition with fair strength, 5 and 8/9.

There still seems to be the same few on the Sunday morning hook-ups, 3AGD, 3II, 3YW, 3HG. We never seem to get Bill 3AMH on it these days; what's the matter Willie, is the b.c.i. a problem? Bill Wines has completed the 144 Mc. beam so hopes to hear something there soon, although has been doing alright on 20 mx, having received QSLs from PY2CK, PY5DP, VE7ADF, W0CXC, W0JF1 and a few others. Ed 3AKE, from Geelong, was heard on the band recently, but there is not enough Geelong boys on the hook-ups. 3IC is on a fair bit.

Gordon 3AGV, at Colac, will soon have to be busy making the necessary arrangements for the Convention which is to be held there on the first week in November. If you require any assistance, contact some of the chaps as we are all willing to help.

CENTRAL WESTERN ZONE

Our Zone Convention will have been held by the time these notes go to press, but we will be very pleased to welcome everybody who can "make" the State Convention to be held in Bendigo on 19th and 20th November. Neville 3ACN will be organising our "wants" at Bendigo and details of programme will appear in "Amateur Radio."

Most of the local active Amateurs took part in the R.D. Contest and all seemed to have enjoyed it very much. Conditions on the 80 mx band have improved of late, so our hook-ups are well patronised and those interested in DX say that they are able to work a fair amount. David Goldsworthy made a trip to town recently and brought back some disposals equipment so we have been busy the last few days checking and talking about the items which we were lucky in obtaining. I guess most of the chaps have been so employed recently.

NORTH EASTERN ZONE

Des 3BP has been on 80 mx lately. Jack 3AKC is active, having recently constructed a 20 mx converter. Howard 3YV expected to be off the air for a period, at time of writing, and Col 3WQ has been away on school holidays. Frank 3ZU has an interesting time travelling round the district as part of his job. Ken 3KR is chasing the DX lately, and Hugh 3AHF is understood to prefer that activity. Bill 3JP has been exercising the plate modulated converted AT5 on 80 mx.

It is not known how Vic. 3ABX is going with 2 mx. Des 3CO has quite an interesting rig to work 20 mx DX, while Syd 3CI has been having a go on 15 mx as well as entertaining a recent welcome visitor in Hughie 5BC from Renmark. Tom 3TS is moving on with the tower to carry his beam antennae, and George 3GD is interested in 15 and 20 mx. Jack 3PF, like Jim Harrington, has been quiet lately. Brian 3ASF has been active. Ted 3AOB is probably about, and our Secretary, Earle Scones, definitely is, but without that BC348 yet. It is not known how John 3ZBG is going in Numurkah with his 2 mx equipment.

Norm McDougall is to be congratulated on joining the Institute as an associate member. Jim Muntz has not got around to doing anything with his 32v. power yet. Vern 3AXW has had quite some interest with the floods along the Murray River. Alex 3AT is finding it very hard to keep up his radio at the moment. It is pleasing to note that Jim 3JK is moving about again, and once more Doug, now 7IJ, was heard on 3700 Kc, this time in the R.D. Contest.

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QUEENSLAND

MARYBOROUGH

4AI plans a xtal controlled converter for 2 mx; works Ws well with his 40 ft. high double extended Zepp. 4CB was indignant at "A.R." notes depriving him of 4 elements of his 2 mx beam, so here it is, there are 12, not 8 elements, so now you have your four missing elements back, Arch. 4BG says anyone wanting standing waves can call and collect some from his 14 Mc. beam feeder lines. Don't rush, chaps, there are plenty to go around. Ron says he has had standing waves so long they must be tired. Is trying a Gamma match and co-ax feeders instead of 300 ohm ribbon.

Grahame Pooley only has to pass the theory paper at the next examination to collect his ticket; meantime is re-building his AT5. 4GH has not been on lately.—4BG.

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SOUTH AUSTRALIA

Pansy's warning that he would no longer be writing these notes puts me at a grave disadvantage. I shall now have one less reader than he had. My wife was, to my knowledge, the only person who for some reason or other, always dived on "Pansy's Page."

Incidentally, your Council was much taken aback when the rotund gentleman made his announcement that he would be unable to continue as scribe. It is true that for some time we had all secretly believed that the old fellow was losing his touch and that each and every one of us could do better. Alas there was but one present with the courage of his convictions. This oaf was misguided enough to put his signal on the air.

Talking of convictions. The good Doctor had been in a state of jubilation and anticipation for the past month. He had ground planes to be erected, v.h.f. converters to be built and what not. Norm Coltman had reserved a room with all the trimmings. But the plans of mice and men . . . The magistrate took into consideration my previous good citizenship and contented himself with a donation.

It was quite an education to hear those two fishermen, 5QR and 5BY discussing their recent catches. The conversation went something like this: "Did you work that Leichenburger last week?" "Sure, and wasn't he down in the mud! Just managed to copy him! But he's promised to airmail the QSL. I gave him 599."

Ole Black Joe gave me a ring today (I call him Ole Black Joe because he always seems to be coming when there's a job to be done. Not only coming, but a stayer) to advise that the Brompton Methodist Mission Youth Radio Club is coming along fine. The boys are aged from nine to fifteen years and are most enthusiastic. They are also most appreciative of the books which have been sent along. The club meets alternative Fridays and Joe assures me they are making good progress. Many of the lads had never used a soldering iron before, but they have succeeded in constructing xtal sets already. It is hoped to hold an exhibition of their work during the Xmas holidays.

Joe sounded very excited on the phone and now I have a feeling I know the reason. It seems to me that Joe will soon be moving the shack into the house. His daughter is to be married on 15th October to Brian Winkler, whom I believe, is well known to the VK3s. Congrats. Brian, and all the best to you, Joyce. And Joe, nothing less than a keg.

It will be seen that I am not given to boasting as was my predecessor. I have not yet mentioned the general meeting which was undoubtedly the best I have ever attended. Naturally this meeting was held in Adelaide—the queen City of the South (no comment from the nautical types, please). The main attraction at this meeting was a display of equipment which had been constructed by members. Each exhibitor spoke for approx. five minutes on his gear and mighty interesting it was. General comment was that there should be more of it. Perhaps I should apologise to those who won prizes, but it just did not occur to me to obtain their names for this record. However, I have no doubt they will forgive me on this occasion.

Pete Bowman made some very pertinent remarks on the matter of the v.h.f. bands and t.v. This matter is to be taken up with F.E. with a view to having it pressed most strongly.

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on Thursday, 17th November, 1955. Morse and Regulations are held on Monday and Theory on Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with the Secretary W.I.A., Victorian Division, 191 Queen Street, Melbourne (Phone FJ 6997 from 10 a.m. to 4 p.m.), or the Class Manager on either of the above evenings.

I have been informed that the Magazine Committee have plans for improving our publication. Would members please note those last two words? "OUR PUBLICATION." It is ours. Whilst a competent Magazine Committee is important, the committee must have assistance from me . . . YOU and YOU. If you do not feel up to contributing an article, why not assist by making a subscription in the name of one of your DX mates? 5FO tells me that the mag. is much appreciated in islands known, once upon a time, as our Near North.

And now for our country notes. It is with regret that I admit that these consist solely of notes from the South East. Southeasters, please don't take my regrets in the wrong way, I'm new at the game. I just want to needle those guys in other parts of the State. How the devil am I going to maintain this State's supremacy against the onslaught of the Pincotts and others who would deprive us of our heritage?

It seems to me that the folk in the Mount have a real tale of woe. My correspondent mentions severe commercial QRM on 7 Mc. and even more severe QRM in the form of high winds. The latter being responsible for much damage to antennae. In regard to this 7 Mc. QRM, please remember that F.E. is most anxious to have details which will enable them to make representations to the proper authorities. This request applies to all Amateurs. My correspondent's remarks just reminded me of F.E's. longstanding invitation.

5KU suffered severe damage from the high winds in addition to damage from lightning which seemed to pick out his remaining antenna for particular attention. Ventilators were blown out, meters and other components damaged; bad luck, OM. 5MS also lost his beam. Just a week before the R.D. Contest. However, I understand that Stuart was able to effect repairs and make his presence felt in the Contest.

5TW has moved to a new QTH. Any improvement OM? Most of us pick the new site with a view to bigger and better operations, but if you have read the paper in the last couple of days, your heart will bleed for me. 5FD got a flying start in the Contest with an antenna hooked to the fowl house. Yeah, I know that's corny, but they grow a lot of corn or something in the South East and the rest of the State hasn't given me a lot of dope.

Leo 5ZAQ or should it be 5ZAG? Blame my informant's ball point. Leo also lost his beams but there does not appear to be as much sympathy in this letter for you, OB. They reckon your beams are just babies. Nice guys, aren't they?

John, you have my sympathy. Let's sing together, "You forgot to remember."

Stuart, my esteemed correspondent, if you have read the notes this far, you will appreciate that your suggestion, under our present leadership, is unlikely to be acted upon.

I have just been reminded that a certain VK3 is of the opinion that our former scribe was not capable of filling a page of log in any Contest. This statement has been hotly contested by those present. Some maintained that he was incapable of making an entry. The Chairman called the meeting to order and insisted that this important matter be put to the vote. This resulted in the meeting conceding his ability to record half a page of log. We trust that this decision will meet with the approval of the aforesaid VK3. We would remind all VK3s that we VK5s are capable of copying all types of morse from the Lake Erie Roll to mediocre.

Before closing I would like to thank all those who have assisted me. My special thanks to those VK5s who provided material and to one Doug Bowie who encouraged me with a case of whisky.

My present headache is due entirely to my maiden efforts as a scribe.—5JD.

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PAPUA—NEW GUINEA

Another Remembrance Day Contest has come and gone with the majority of the VK9 gang still flat on their backs trying to get over the arduous 24 hours. Yours truly, after tolling for something like 16 hours, could only manage a croak and any questions were answered with a mute look of despair. Haven't as yet heard how the gang fared in the points score, but from the amount of QRM going on would hazard a guess that some fairly good scores were totalled. Never have so many VK9s been heard on the air at one time. They were all there. VKs 9FN, 9DB, 9WK, 9RM, 9RC, and 9VP just to mention a few heard. Guess that the VK9 Division worked pretty hard, but it is doubtful if we could manage to scrape enough points together to cause any concern to some of the VK States wherein scores of something like 300 contacts were not rare.

Our Secretary, Doug. 9OQ, requests information from those interested in non-Amateur activity in the 7 Mc. band. All reports will be welcome.

Two new members to go before Council next meeting are Murray Ewen (9CK) and E. Penikis (9VP), both of Port Moresby. We welcome you to the VK9 Division fellows, and trust you find DXing from this part of the world to your liking. Hope to see you both some Sunday on the Island Net, 7080 Kc., every Sunday at 1000 hours.

We hear, too, that Frank Mollinger, of Lorengau, Manus, is starting an operator's school for natives and one of our associate members, C. Fonceca (Fon to the boys) is joining to brush up his technical course. Trust you make the grade soon and congrats to Frank Mollinger.

Another likely starter for A.O.C.P. is G. King, of Lae, who has applied for membership to the VK9 Division. Membership is steadily growing and it looks as though we may soon have our fortieth member.

It is with regret that notice of resignation from 9BS was received recently. The junior operators at 9CW, Wau Radio Club, are fast brushing up on their geography. They should, too, with Peter 9RM putting them through their paces and showing how DX is worked.

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CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

SIX METRES—A SHARED BAND?

Editor "A.R.," Dear Sir,

It must be assumed that t.v. programmes in Australia for some considerable time will be of rather short duration and limited to a few hours in the evening and, I suppose, to Saturday afternoon, to cater for sundry sports' enthusiasts.

Obviously then, 50-54 Mc. will be unoccupied by t.v. broadcasts for the major portion of the 24 hours. It seems to me, therefore, that there is no reason whatever why the band should not be allocated for Amateur use during certain defined periods of the day.

I, for one, and I am sure there are many other Hams, would like the W.I.A. to approach the powers that be and see just what can be done about allocating the band to Amateurs. (A period from 0599 to 1700 suggests itself.)

I suppose the reason behind this line of thought may be considered rather piffling and selfish, but the fact remains that no VK has yet worked into the America's on six and, by golly, no VK ever will if we do not have the band on a shared basis.

It seems unlikely that the m.u.f. will rise to 50 odd megacycles before January, 1956, but it is also known that it certainly will during the coming three or four years.

In any case, a cross-band QSO, 6 and 5 mx, would entail quite a bit of fooling around at both ends with receivers and not every Ham has a nice rhombic or vee beam on hand, which would seem the simplest way out on the antenna problem.

Further to this, I notice in a monthly magazine ("R. & H.") that channel 2 has been allocated for both Sydney and Melbourne. Why the big hurry to pinch 6 metres then?

Of course all right thinking Hams will wonder why channels 1 and 2 were allocated where they are in the first place.

Anyway, OM, I still think the shared band idea a darn good one (we share other bands with Commercials now, however unwillingly) and I request that you place the idea before the Federal Council or whoever deals with such matters.

—MAX LINDSAY, VK4HD.

LIMITED LICENSE

Editor "A.R.," Dear Sir,

Your correspondent, Roth Jones, VK3BG, has added fuel to the fire of controversy when he belittles the efforts of experimenters in the v.h.f. field and elsewhere in Amateur Radio.

He has confused "experimenter" with "innovator." The only outstanding innovation in the scientific field over the last two decades is man-made nuclear fission, everything else amounts to the better application of old ideas, thanks to the experimenter.

The doings in the locked laboratories of Woomera are of no interest to that mentally alert, progressive individual, the experimenter, and his work towards the technical betterment of Amateur Radio is only limited by lack of time and finance. After all, he does not exist to furnish ideas for commercial interests, so it is irrelevant if his findings are not new to them. How extraordinary is it that the professionals, after their unwise choice of 30 Mc. for a certain purpose, seek to perpetuate this error by determining to use 50-54 Mc. and 63-70 Mc. for t.v.?

Commercial interests, again, have kept very quiet about their knowledge of the diode n.b.f.m. modulator, automatic receiver, low-noise v.h.f. front ends, and ground to ground v.h.f. communication of daily occurfence between Sydney and Forbes—all resulting from the painstaking efforts of that outmoded individual the experimenter (who also writes articles for magazines such as "A.R.").

I fear that Mr. Jones seeks to represent a class of "Ham" who has grown old and tired in the pursuit of the hobby, who resents new people (limited licensees) and new ideas.

Even the most outstanding aim and object in inaugurating the Wireless Institute of Australia—to encourage scientific research into radio communication, which is the only purpose for which an Amateur Radio License is issued—has been forgotten.

This W.A. controversy is of far more than just parochial interest to the new experimenter, the Z call holder, in view of the above, and, as I see it, these new fellows are affording an overdue blood transfusion to our anaemic body.

Recently a limited licensee delivered an enthusiastically received lecture on beams to the Divisional V.h.f. Group and his time had to be extended to cope with the numerous questions asked. Requested to do so, he repeated the lecture at the General meeting. Result—audience apathetic, two fellows near me asleep (no doubt, dreaming of DX and international goodwill), no questions.

—ADRIAN ROFE, VK2HE.

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